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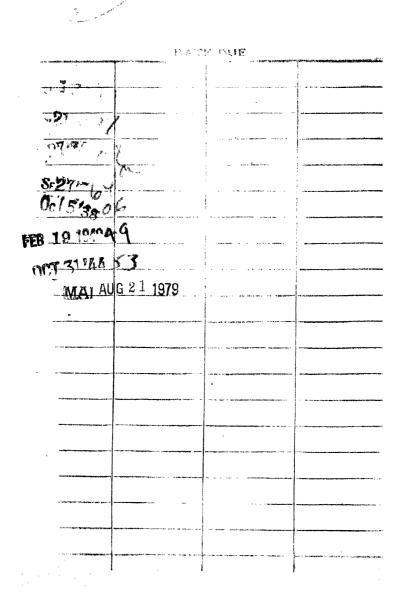
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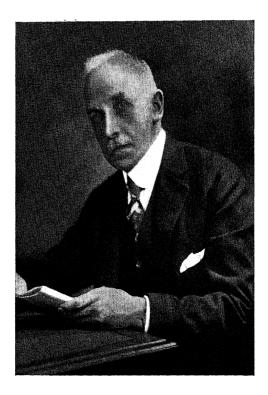
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The Human Comedy As Devised and Directed by

s Devised and Directed Nankind Itself

Bу

JAMES HARVEY ROBINSON Author of "The Mind in the Making"

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With an Introduction by

HARRY ELMER BARNES

Author of "The History of Western Civilization"



HARPER 👉 BROTHERS PUBLISHERS

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FIRST EDITION

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То

Edward Potts Cheyney

Fellow Student of the Comedy

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INTRODUCTION

JAMES HARVEY ROBINSON was an incisive scholar, a great teacher, and a brilliant writer. While he excelled in academic fields, he little resembled the typical academic figure. There was in him little of the cloistered pedant or the drier-than-dust compiler. While immensely learned, he believed that human learning had little significance unless it was put directly at the service of mankind. Always intensely interested in the human past, he believed that its study is of importance only in so far as a knowledge of the past may enable the present to plan more intelligently for a better future. He studied the past of humanity in order that we might know, as he put it, "how we got this way."

Professor Robinson first gained general fame among students of history. He achieved his wide reputation here because he wrote the first textbook on European history which was reliable in scholarship, lively in tone, and penetrating in its interpretations. It revolutionized the teaching of European history and put a whole generation of history teachers and history students in debt to the author.

He reached his wider audience in the general reading

public through his brilliant essay on The Mind in the Making, in which he endeavored to bring together in brief compass the reflections which had accumulated during a lifetime of historical study. The book was a great and deserved success. As Professor Schapiro has well put it: "The Mind in the Making was addressed to the general public and achieved the astounding success of being a 'best seller.' It is primarily a plea for freedom of thought, not on abstract grounds, but on the practical ground that history has proved that the liberation of intelligence is most essential to the progress of the race. The book achieved something that was rare in America, namely, the popularization of advanced knowledge in a manner that was scholarly and cultured. It was written in a style of limpid clarity and fascinated many readers who were introduced, for the first time, to the world of learning by one of its leaders. . . . In all his teaching, whether oral or written, he was always the liberator. Profoundly convinced that the liberation of mankind came only through education, he put his great knowledge of the past at the service of those who came to learn."

Professor Robinson's book, The Mind in the Making, was published fifteen years ago. Since that time he had gone on reflecting in a more profound and original fashion than ever before upon the drama of mankind. He was ever thinking and planning with respect to a great

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work which would present and analyze the rôle of mankind on our planet. Professor Shotwell has admirably portrayed these interests of Robinson's later days: "Just as he refused to accept the sources of history at second hand, he refused second-hand thinking about the nature of society, or even of man himself. More and more he saw the task of the historian as one that covered all those varied fields of activity which have contributed, obscurely as well as openly, to the structure of our civilization. And so, as those students who studied with him in the early days can testify to the significance of his scientific method, those who followed after drew from him the inspiration of a great conception of human evolution. But as for himself, as the years passed he grew to be a detached observer of what he whimsically insisted upon regarding as the human comedy."

Professor Robinson's notion of the activities of man on the earth as a "comedy" suggests comparison with Dante, who viewed the same field as a divine comedy. In both cases the authors used the term comedy in the sense of a drama rather than as something humorous or facetious. In the case of Dante, the divine comedy of man was thought of as controlled and directed by the heavenly powers. With Robinson, the human comedy meant the drama of man as devised and directed by mankind itself.

While Professor Robinson's own modesty would have

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prevented him from even suggesting a comparison with Dante, yet it is not at all pretentious for a student of human culture to make this comparison. Dante was far and away the ablest systematizer and popularizer of medieval supernaturalism. James Harvey Robinson can be fairly compared with Dante as the most competent, engaging, and persuasive expositor of the knowledge which has grown out of our own age of science, secularism, agnosticism, and intellectual emancipation. The comparison may, perhaps, be carried farther. Dante was the last great spokesman of the medieval order of things. It may well be that Professor Robinson is the last outstanding champion of the age of science, capitalism, liberalism, and democracy-in other words, of the fruition of that civilization and world order which followed the medieval. Professor Robinson's treatment of man in the perspective of our age is as coherent and consistent as Dante's presentation of the medieval outlook upon the human drama.

Professor Robinson left behind him material upon the human comedy both more complete and more thrilling than his justly famed *The Mind in the Making*. I have been requested to go through this material and provide for its publication in a form as close as possible to the arrangement which Professor Robinson would have provided had his life been spared. To do this is a double privilege. It permits me to make some small return to my teacher and friend. But even more important is the possibility which it affords to place before the American reading public in accessible form some of the finest writing and most cogent thoughts of one of the most fearless and incisive minds that this country has thus far produced. The material which is here presented is a well-integrated body of historical writing and social philosophy. It offers the most comprehensive analysis of the drama of man from the historical point of view which ever issued from his shrewd and discerning mind.

In some few places I have been compelled to fill in certain gaps or to enlarge upon brilliant fragments. But the sum total of such material is slight. Moreover, in all such cases what I have supplied represents faithfully Professor Robinson's point of view. I have not ventured to add anything which does not represent material that I have discussed frequently and fully with Professor Robinson in personal conversation or have taken from his lecture notes. I have presumed to eliminate repetitious material, save where slight repetition might obviously serve the cause of emphasis or summarization.

It is held by many that we are living today in one of the three or four major transitional periods of human history. If this is so, a knowledge of the human past should be of the highest value in enabling us to pass over from our era to the next with the greatest amount of intelligence and the least possible waste and violence. No writer of our era is better qualified than James Harvey Robinson to supply this relevant guidance from the past.

It is Professor Robinson's thesis that man has now reached a stage in his civilization where he might easily enter into a utopian existence that would make any of the utopias dreamed of from Plato to Edward Bellamy seem trivial and drab by comparison. We can produce all we need for creature comforts and physical protection in a very few hours of work each week. We have all but conquered disease and have reduced much of the pain incidental to such ailments as persist. We have banished fear of the supernatural world and its powers. We know how to handle the delicate and difficult problems of amour and domesticity. We have come to understand the nature of war, its barbarities and stupidities, and the means of preventing it. We have expert knowledge which would suffice to govern our public dealings with intelligence and efficiency. We have the facilities for cultivating and enjoying the leisure that is for the first time available to the majority of men.

Why do we tarry, perhaps fatally, on the road, amidst unnecessary privations, misery, fears, suspicions and carnage? Professor Robinson's answer is overwhelmingly cogent and precise. He minces no words. It is because we have not brought our thinking up to date. Our minds are not yet fitted to master and enjoy the machine age and the international order which a very few scientists and inventors have created for us. We are victims of "cultural lag."

There are two chief obstacles to human advance. One is the fact that we are burdened down by a vast baggage of outworn traditions and folkways coming to us from a remote past. Professor Robinson amplifies Francis Bacon's suggestion that these are the real "Devil" which modern man should combat with all his energy and resources. The other barrier to progress is the fact that few men ever grow up mentally. They plod along on ideas and convictions acquired in childhood from our antiquated historical baggage and never question these "fundamental verities."

Professor Robinson would free man from all this and make it possible for us to claim our just heritage. His book has in it amply that which would work the greatest revolution since man parted from his ancient simian ancestry. He has discharged his responsibility to society in truly masterly fashion. What will the American reading public do about it?

HARRY ELMER BARNES

Spring, 1936

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CHAPTER I

HOW THE HISTORIAN LOOKS AT THINGS

W E ARE pretty well accustomed to the idea that a V great deal is being found out of late about the world and even about human beings. Physicists have discovered dead matter to be electrical charges in an amazing state of agitation; biologists reveal every day something astonishing about the ways of life; psychologists, about the play of the emotions. Knowledge certainly comes in rapidly enough, but Wisdom tarries. Life seems to be rather more of a mess now than ever before. At least, our poets and best story-writers and dramatists present it full of bewilderment and frustration. Still, there is usually the implication that a great many of our disappointments and woes are gratuitous and unnecessary, the result of tragic stupidity and want of insight, rather than the fatal dictates of the gods. We ask pitifully, "What keeps us back, when so many undreamedof possibilities are opening before us?" The older longing to be "good," with the hope of making all things right, is giving way to the suspicion that intelligence is what we most need.

This suspicion is reflected in a great number of books which have been coming out since that most imposing stupidity—the World War—to show how badly we think. Formerly only a few philosophers wondered about thinking; now all of us are invited to consider why we manage our growing resources of information and insight so ineffectively as regards reducing friction with our fellows and maintaining peace in our own bosoms.

It is evident enough that our thinking and feelings do not change so readily as our circumstances, and cannot as yet keep pace with our knowledge at its present rate of increase. We continue to think of new things in old ways. Our sentiments teem with embarrassing anachronisms of which we are usually quite unconscious. Both old and new elements enter into all life's perplexities. The old, as we shall see, always enjoys the right of way. It is as yet rarely summoned to prove its case. The old is at bottom a habit; the new an adventure. And habit is so much more safe and comfortable to most of us most of the time than adventure! The new attracts attention and comment by reason of its freshness. The old, by reason of its familiarity, is commonly merely taken for granted. Nevertheless, since almost all things are as they are because they have been as they have been, their secret lies in the past. Our present problems cannot be understood by just looking them in the

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Notwithstanding our sprightly criticisms, we are far more old-fashioned than we realize. Old habits of thought yield very reluctantly to new. This is not astonishing when we consider that it has taken perhaps a half million years to inch along as far as we have gone. Ancient ways of thought and action become terrible nuisances long before they can be discarded. Goethe says gloomily:

> Es erben sich Gesetz' und Rechte Wie eine ew'ge Krankheit fort.

The old drags us down like a chronic disease—and its nature has hitherto been badly diagnosed.

This is obviously but one aspect of man's fate. The old is the indispensable foundation of the new. Without it no advance in knowledge and human improvement would be possible. Father Time is the benefactor to whom we literally owe everything, but he is exceedingly jealous of his established scheme of things. Wisdom will come as we learn to recognize vividly our abject dependence upon him and at the same time invent more ingenious ways than those hitherto discovered for exposing and overcoming his inveterate prejudices.

How instructive is our annual symbolism as we reach December 31. The old year makes his bow to the newborn and totters off to the grave. Within a twelvemonth the baby goes the way of his hoary predecessor. We cannot start anew on January 1 or any other day. This truth historians dignify by the term "Continuity of History." We are sadly familiar with this disagreeable fact but rarely appreciate its essentiality in all profitable thinking about human troubles.

It is easy enough to illustrate our unconscious debts to the past. Our knowledge and various dexterities, our prejudices and conceits, our scruples and obligations are very seldom of our own making. They are historical products handed down to us, frequently from remote periods and alien peoples.

Let us consider the historical implications of this book. It is printed on paper invented by the Chinese early in the Christian era and introduced into Europe in the twelfth and thirteenth centuries. The letters were devised by the Phœnicians, adopted by the previously illiterate Greeks, modified by the Romans, and altered, so far as the "lower case" is concerned, by the medieval scribes. The capital letters are still the same that we find in ancient Roman inscriptions. The language is based upon a western German tongue used by the Teutonic invaders of England in the fifth century. It was later given added range and sophistication by the admixture of Latin and Norman-French words. English colonists brought it to this country, and it remains almost the same as when

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Jamestown and Plymouth were founded. Shakespeare and Francis Bacon could have understood this volume as it now appears, just as we can read the authorized version of the Bible prepared under their dread monarch, James I. Printing was a Dutch and German innovation made nearly five hundred years ago. I am writing this material in the month of "August" which is socalled after the Emperor Augustus, who added a day taken from February to make his month as long as the preceding one dedicated to Julius Cæsar. The year of Our Lord 1936 represents a method of reckoning time initiated by the ancient Egyptians, improved by Julius Cæsar, connected with the birth of Christ by Dionysius Exiguus in the sixth century, and readjusted by Pope Gregory XIII. These are but a few of the ways we unconsciously perpetuate the past. But they are enough to depreciate the stock of the hundred per cent American to a point where it would have to be reckoned in thirtyseconds of one per cent.

Π

All advancement in intelligence and insight depends upon our ability to call in question and reconsider what we have hitherto taken for granted. The young Arab chants the Koran in a Cairo mosque; the Japanese mother trips through the red gate of a Shinto temple to rub her ailing baby on a stone fox; the old-fashioned Chi-

nese student conned Confucius' Analects; and Mr. Bryan read his Bible. Their ways were different, but to the critical onlooker each had exactly the same reason for his particular confidence. Each took for granted the habits of the group in which he happened to be reared. This is Truth for the multitude and for the conspicuously good and respectable of all ages and climes.

During the two or three thousand years of man's immediate past a certain number of thinkers have, as a result of curiosity, contrariness, or an awakened sense of the prevailing stupidity, set to work to reëxamine, in this detail or that, what was taken for granted by their fellows. The Hebrew prophets, beginning with Amos and Isaiah, denounced the prevailing ideas about God and reexplained the service he demanded. Gautama, the Buddha, two or three centuries later, showed up the vanity of worldly ambitions and recommended new paths to philosophic calm and peace of mind. Socrates overdid questioning and was put out of the way by the respectable citizens of Athens. Euripides also had more doubts than his generation cared to listen to. The expedients of those who have quarreled with Father Time's "wise saws and modern instances" have been various. The Hebrew prophets listened to the still, small voice of God, and said "thus saith the Lord"; in India holy men sought truth in silence and meditation; in Athens chattering in the market place was quite as highly esteemed. In the late Mid-

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dle Ages the habit grew up of defending lists of carefully formulated theses about God and his angels, sin and salvation.

By the opening of the seventeenth century Bacon, Descartes, Galileo, and others lost all interest in the discussions of the scholastic professors and proposed a new way of learning how things are—namely, by trying to see how they work. The incredible results of experimental science are too obvious to require rehearsing here. This method of seeking truth stands approved among all those qualified to have an opinion on the matter.

But in the nineteenth century still another device for increasing understanding was developed. The biologists began to realize that their insight into the peculiarities of a plant or animal could be vastly increased by taking account of how the organism had come about, that is, by studying its history and that of its ancestors. The human body, for instance, is far more explicable in many respects when viewed historically than "as is." The atrophied muscles for moving our ears and those which once wagged an ancestral tail, together with certain maladjustments which came from getting on our hind legs become plain enough if we look back far enough. Anatomy today tends to run off into embryology and even into protozoölogy, for our life is dependent upon the amœbalike white blood corpuscles which swim through

our arteries and veins and cluster by hundreds of millions in our tissues.

The Fundamentalists refuse to accept man's pedigree as traced by biological genealogists. But the history of their own bodies offers a sort of recapitulation of the history of their race. If they would only give some attention to God's works as well as his "word," they might make less trouble for teachers of zoölogy. If they could once grasp the fact that the most stalwart of them not many years ago was a single fertilized cell too tiny for the human eye to discern, this historical consideration could hardly fail to modify their contentions.

It turns out, then, that it was, curiously enough, the biologist rather than the "historian" who first appreciated the tremendous advantage of finding out how things had come about in order to comprehend the more fully how they are. But the students of nature did more. They furnished a new setting for human history. They have shown that man is part and parcel of the vast realm of living creatures and shares with them the exquisite responsibility of being alive. They also suggested the starting point from which we may reckon the beginnings of the unique human experiment which we call civilization. Its advance is to be measured by the degree in which it transcends the possibilities of our animal progenitors and all our animal relatives. An individual chimpanzee can be taught by patient trainers to do many humanlike things

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-such as drinking out of a cup, riding a bicycle, and smoking a cigarette. But if he returned to the jungle and his own folk he would not be able to interest them in these innovations. Man alone, owing to certain unique physical peculiarities into which we cannot go here, has been able to take up, apply, and gradually accumulate the inventions and ideas of those rare fumblers who came from time to time upon some new notion.

m

But what about the historians? They have for two thousand years and more been pretending to tell us about man's past; but their works until very recently have been pretty dull and unilluminating. I, at least, find them so, and infer that what bores me is likely to bore others. They tell me so much that I do not care about and fail to answer the questions which I am most eager to have answered. Voltaire long ago heaped reproaches on the historians. He tried his hand on a new history which he prepared for a friend with the expressed hope that it might interest her. For the old chronicles of dynastic wars and religious controversies he substituted the tale of human customs as they had changed through the ages. From a modern standpoint he was ill qualified for the job, but the idea was significant. During the French Revolution the high-spirited Condorcet, a fugitive from the terrorists, hastily wrote out his "sketch" of human

progress, which left out almost all that had been hitherto included in general accounts of history, and substituted highly exciting reflections on the past, and on the future prospects of that prime autodidact, Man. Herbert Spencer pronounced history, as commonly presented, worthless. Buckle believed it to be an imposing mass of meaningless reminiscences and tried to substitute something better. But he was just a trifle too early to be affected by the evolutionary and revolutionary teachings of Darwin. Green in his famous *History of the English People* endeavored to escape from the routine account of monarchs, courts, and wars and to give a fuller recognition to the conditions, preoccupations, and achievements of the nation as a whole.

Just as the World War was coming to a close in 1918 a German writer of no special academic standing, Oswald Spengler, issued a stately work in two volumes under the startling title, *Downfall of the West*. This opens with the most pertinent indictment of historical writers with which I am familiar. One does not have to share Spengler's rather mystic and Hegelian notion of the essence (*Seelenthum*) of history, nor his conclusion that we are now in the last stage of a cycle which is bound to end with our age. We do seem compelled, however, to accept his contention that the methods and results of studying *man's world*—his achievements and perplexities, his morals and manners, his fears and aspira-

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tions, his religions and arts-must be quite different from those appropriate to an investigation of the so-called world of nature. The art of inquiring into the past of man himself is, in short, so far very ill developed. No one has shown up its imperfections better than Spengler.

He complains that historians have been narrow and provincial and have mistaken their particular part of the world for the whole human experiment. This is true enough. "World" history, written by Westerners, is an affront to a Chinaman or an East Indian or even an Arab. But the gist of Spengler's argument is far more profound -and it is the gist of this chapter. Historians have usually confined themselves to reporting events or describing institutions of a particular part of the world during a particular period. They have told how things *have been* rather than how they *came about*. They have made contributions to human history, but have so far failed to give it its most precious significance.

We can ask two quite different questions in regard to the past: "What has happened here and there from time to time?" To answer this was the aim of former historians. Although Gibbon regarded the task of the historian as "an indispensable duty," he declared that "diligence and accuracy" were the only merits to which the historical writer could lay claim. The second question is, "How is it that we now do as we do, feel as we feel, and know what we know?" This is a novel inquiry which fills the orthodox with consternation. It is to them nothing less, in the strong words of Scripture, than a whoring after strange gods, a disreputable kind of "philosophy of history" which should be left to mystic philosophers and poets. While I share their distrust of the various kinds of philosophy of history, including Spengler's, I am confident that the answering of the second question must be the aim of historians if they are to exercise their full effect in the development of human enlightenment. Of course the first question is a necessary preliminary; but the hewers of wood and drawers of water have been busy with it so long that we can begin on the second.

When Lloyd George submitted his budget of 1909 in his "war on poverty," it was defended by Winston Churchill with a fresh argument. "Formerly the question of the tax-gatherer was, 'How much have you got?' . . . Now a new question has arisen. We do not only ask today, 'How much have you got?' we ask, 'How did you get it?'"

When historians become expert in answering the question as to how we and our troubles have come about, history will deal mainly with what Mr. Marvin so penetratingly calls "the living past," and this will radiate a light in which all our achievements and difficulties will stand out far more distinctly than ever before.

The present writer cannot explain very well even to

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himself how he has happened to devote a great part of his professional life to working out a different conception of history and its import from that handed down to him. He has hewn wood and drawn water enough to be in the historians' guild, but he has always felt a certain qualm when he was forced to explain that he taught history. He feared that it might be assumed that he was really interested in what has hitherto passed for history. He can recollect his first meeting up with that august subject in school. There was a textbook in which something was said of Pocahontas, the evacuation of Boston, the embargoes, and Fort Pillow. All these matters seemed irrelevant to an eleven-year-old youngster, but fortunately it was the era of decalcomania, a now-forgotten amusement-today a device confined to the decoration of cheap china. For a few cents one could get a set of brightly colored heads of just the size to fit neatly on the American heroes whose portraits appeared in the textbook. There was nothing unpatriotic in the process of transfer, for the faces were hidden until they were irrevocably attached to the hero. Washington warning the pig-headed Braddock turned out to be a darky; President Jackson was transformed into Pontiac; General Burnside, into a Barbary pirate. Some heroes had bottle noses and exhibited unmistakable signs of dissipation.

It took me some years, however, to realize that what most people think of as the study of history consists in getting the right head on the right body, the right date on the right battle, the right territorial transfer associated with the right treaty. I have, God forgive me, participated in a great number of examinations for the doctor's degree. On these occasions timid and overwrought young men and women are summoned to exhibit their proficiency in this pasting madness (which seems to be what "decalcomania" means). How easy to say the battle of the Boyne when you should have said that of Bouvines; the treaty of Rhyswick when you were expected to say Nimwegen; Urban V when your inquisitor, who had once struggled through Theodoric of Niem's *De Scismate, Libri tres*, had in mind Urban VI and his jocose atrocities.

Even intelligent people often explain that they do not care for history because they cannot remember dates. But who can, except the pedant or one that is using the dates to give precision to a fairly thorough knowledge of a period? We know our own history better than that of Charles V or Napoleon, but most of us could hardly do more, without a good deal of recollecting, than give the alleged date of our birth, and those of graduation and marriage, and the sequence of children, if we happen to have graduated, been married, and had children.

Bergson has pointed out that the brain is an organ of forgetfulness. It certainly has to forget almost everything in order to remember anything. Its usefulness con-

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sists in recalling the right thing at the right moment. The historian usually has had a feeble power of discrimination. He humbly reported what his sources happened to include, with little attention to whether his readers or even he himself had any obvious reason for being interested in what he selected. What onlookers call "impartial" history and professionals call "objective," is merely history without an object. This is no implied excuse on my part for slipshod work. History may be both true and useful, since nothing is more scientific than showing how things as they are have come about.

IV

One who undertook half a million of years ago to guess how man would turn out when he got civilization well under way might be puzzled by the outcome. He would have been a very shrewd prophet indeed to have foreseen that, being a sort of ex-animal, man would tend to sanctify the habits he happened to acquire. The other animals presumably just obey their habits without attempting to justify them or give them a fine name. One of the great obstacles to a free reconsideration of the details of our human plight is our tendency to regard familiar notions as "sacred": that is, too assured to be questioned except by the perverse and wicked. This word, to the student of human sentiment, is redolent of ancient, musty misapprehensions. It recalls a primitive

and savage setting-off of purity and impurity, cleanness and uncleanness. The French retain the double meaning of the word in their sacré, which means at once "blessed" and "damned." Blessed is he who agrees with me and let others be damned. When we believe that this and that notion of ours is "sacred," we may be sure that, as Mr. William Trotter has emphasized in his Instinct of the Herd, in Peace and War, it is a childish impression which we have never carefully scrutinized. A woman once warned me that she was "religious" and that I had better be careful what I said to her. I replied that she seemed to suspect me of irreligion from her standpoint, and that she should also be considerate of my feelings. The claim to immunity on the ground of sacredness is by no means confined to religious controversy: it now includes the current system of business, governmental organization, and the family. It is one of the important obstacles in the way of free discussion and readapting our habits so as to bring them into accord with increasing knowledge and new conditions.

Simple prejudices or unconsidered convictions are so numerous that the urgence and shortness of life hardly permit any of us, even the most alert, to summon all of them before the judgment seat. Then there are the sacred prejudices of which it seems to me we might become aware and beware, if we are sufficiently honest and energetic. History might be so rewritten that it would

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at least eliminate the feeling that any of our ideas or habits should be exempt from prosecution when grounds for indictment are suggested by experience.

We need a new kind of historian who will utilize the information painfully amassed by the older ones in order to bring it to bear on the quandaries of our life today. Our problems are ofttimes inherited, and can best be met by fuller knowledge of their origin and development. The State, as we now know it, is a sort of reincarnation of the ancient chieftain and his entourage. Our religious beliefs are ostensibly Semitic, derived from a pastoral people and dwellers in Syrian villages and small towns. Our education still perpetuates medieval or classical conceptions. Our standards in the relations of men and women still smack of the ascetic theories of virtue of the days of Saint Augustine, and our theories of business, as Veblen pointed out, hark back to the eighteenth century. In the discussion of a relatively new issue-the teaching of evolutionary hypotheses-and of a more recent question-the entrance of the United States into the League of nations-we find the sacredness of Biblical anthropology and the authoritative utterances of George Washington invoked. A proper understanding of the past would show the irrelevance of this type of argument. Precedent, however venerable, must be reinspected before it is accepted. Indeed, the more venerable it is the more suspicious should we become that it is an anach-

ronism, originating in times and under conditions far removed from our own. When reverence for the past encroaches upon our meditations and decisions we are admitting an ancient but highly dangerous mischiefmaker, so far as honest analysis and planning are concerned.

Now history might be so written as to undermine prejudice—which means that of which we can be quite sure without giving it any proper attention—and especially the savage survival of "sacredness."

History, in the sense here recommended, is the sovereign solvent of prejudice and the necessary preliminary to readjustments and reforms. It is a sort of *aqua regia* which loosens up things and gives our thinking its necessary freedom. Nowadays all expert physicians in dealing with physical and mental dislocations always ask, "How did he get that way?" They are not content to take what they can see without wondering how it came about. Our social, political, economic, and educational diseases must be dealt with in the same way.

It is a fundamental and hopeful discovery, to be ranked among the great inventions of mankind, that we do not necessarily learn much about a situation from what is sometimes called a scientific method of dealing with it. We can fill a big book with statistical tables and imposing graphs, but so long as we do not ask how we got into the fix we miss the main point. When in the

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seventeenth century almost all educated men, doctors, theologians, jurists, professors, believed in witchcraft one might have prepared questionnaires and surveys to seek out and record the incidence of witchcraft, the frequency of the devil's "sabbaths," the technic of getting up a chimney on a broom or three-legged stool, the per cent of witches who sank when they were cast into the water, the average location of the devil's mark. But all this would hardly have forwarded the disappearance of the delusion. Witchcraft was, it is true, supported by history, but by history in the old sense. One might cite the terrible command "thou shalt not suffer a witch to live," the instance of the witch of Endor, and the tales in Apuleius. But none of these had anything to do with the manner in which the superstition had come about.

What a chastening effect it might have on an ardent Marxian socialist to realize that Marx's theories were a mid-Victorian product, the counterpart of the classical, Manchester, school of defenders of things as they were! What effect would it have on the current worshipers of our Federal Constitution, who would have every schoolchild believe it a sacred and inspired document, to read the Madison Papers, realize the groping, the compromises, the British and French influences that went into the patching together of that important state paper? For an opponent of the entrance of the United States into the League of Nations it might not be a bad thing to see how exactly his arguments resemble those of the opponents of our Federal Constitution when it was submitted to the various States for ratification.

Those who "believe in" the Bible might believe in it in so much less intolerant and hampering a fashion if they but knew the history of the Hebrew religious anthology comprising contributions extending through a thousand years. The late Professor Morris Jastrow has in his Gentle Cynic given a gracious account of the origin of the book of Ecclesiastes and illustrated the methods of sacred writers of yore. The basis of the little treatise as we have it was a description of the vanity of human life. All things are full of weariness unutterable, the "eye is not satisfied with seeing, nor the ear filled with hearing." Man hath no preëminence above the beasts. They all go speedily to the same place. Get what you can but remember that "there is no work, nor device, nor knowledge, nor wisdom in the grave whither thou goest." This gloomy picture was later toned down by the interpolations of a more hopeful editor. Then, since the little book (written perhaps in the time of Alexander the Great or later) had been ascribed to Solomon (who had died some five hundred years before it was composed), a third writer adds a few proverbs to which it was supposed that wise king had been addicted. If one is reluctant to accept the conclusions reported by Professor Jastrow he may consult a little book by George Foot Moore on The

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Literature of the Old Testament, which is a sketch of the various ways the books of the Bible were built up. The history of the New Testament is equally enlightening.

These few instances must suffice as illustrations of the way in which fuller knowledge of how a thing came about may alter our attitude toward it.

We are all endowed with defense mechanisms which operate automatically. It is a poor technic when attempting to convert one's neighbor to attack his beliefs directly, especially those of the sacred variety. We may flatter ourselves that we are undermining them by our potent reasoning only to find that we have shored them up so that they are firmer than ever. Often history will work where nothing else will. It very gently modifies one's attitude. Refutations are weak compared with its mild but potent operation. To become historicallyminded is to be grown-up.

CHAPTER II

THE ORIGIN OF MAN

 $B^{\rm EGINNING}$ a little over a decade ago, there has been a revival of interest in the question whether, were we able to trace our human ancestry back far enough, we should find it merging into that of the higher animals. A bill was passed in the Tennessee legislature in 1925 to prohibit the teaching of any theory of evolution that derives man from the brute, or any other lower form of life. The late Mr. William Jennings Bryan, who may fairly be selected as the most dramatic opponent of evolution in recent years, dedicated his powers of oratory to the proposition that we now give far too much attention to the age of rocks and too little to the Rock of Ages and gave up his life in a vain effort to hold up the hands of the Tennessee legislature; and a prominent New York minister declared that a boy "who thinks himself the descendant of a monkey is liable to conduct himself as a brute." Moreover, it is constantly asserted that men of science have now given up "Darwinism." I once received a letter from an expostulator in which the writer said: "Evolution, good sir, is no longer taught on the Continent and in Germany. Haeckel stands at ninety a lone, pathetic figure. There is not a shred of evidence to support evolution. Where, sir, is there one single specimen evolved? Not one! Natural selection is denied by scientists: Spencer's pet theory of acquired characteristics is disproved. . . . No, good sir-presumably you are a theologian-it is futile to look for a better and more scientific account of creation than that given in Genesis."

I am not a theologian, or even a biologist or paleontologist. But I have had the privilege of consorting familiarly with some of the very best representatives of those who have devoted their lives to the patient study of the matters involved in this controversy. I think that I quite well understand their attitude. Having myself given much time to the comings and goings of beliefs in the past, I see how great a part mere ignorance and confusion always play in blocking the ready acceptance of new knowledge. Some of the difficulties in this particular case are attributable to very hoary misapprehensions; but others to the quite recent advances in science. It should not be difficult to clarify the subject for those who are now honestly puzzled by the seemingly opposed statements that reach them.

It is true that biologists have, many of them, given up what *they* call "Darwinism"; they have surrendered Spencer's notion of the hereditary transmission of acquired characters, and they even use the word "evolu-

tion" timidly and with many reservations. But this does not mean that they have any doubts that mankind is a species of animal, sprung in some mysterious and as yet unexplained manner from extinct wild creatures of the forests and plains. This they simply take for granted; for, unlike the public at large, they distinguish carefully between the varied and impressive evidence which appears to confirm man's animalhood and the several theories which have been advanced from time to time by Lamarck, Darwin, Spencer, Haeckel, and others, to account for the process by which organic life, including man, has developed. The first confusion of which we must relieve ourselves is that between the facts, on the one hand, revealed by geology, biology, and comparative anatomy, and, on the other hand, the conjectures suggested to explain the history of life. As time has gone on the facts which compel anyone acquainted with them to accept man's essentially animal nature have become more abundant and unmistakable, while many of the older theories of evolution have, as a result of further study and increasing knowledge, shown themselves to a great extent untenable. Much light has been cast of late on the history of life, but in some respects it seems more mysterious than ever before.

It may be well to stop a moment to review the history of the belief that man is related to the higher animals and

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is part and parcel of the whole order of nature. Spencer and Darwin did not originate this notion.

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The tendency to think that the earth and all its inhabitants came about gradually is a very old one, and can be traced back to the early Greek philosophers. It was beautifully set forth two thousand years ago by the Roman poet, Lucretius, in his treatise On the Nature of Things. Then the Hebrew or Babylonian belief was introduced into Europe that all things had been created in less than a week out of nothing, and that man had been freshly formed in the image of God on the sixth day of creation. By the eighteenth century-a hundred years before Spencer and Darwin took up the question-the study of the bodily resemblances of man and the higher mammals, and the discovery of the fossil remains in ancient rocks, revived the conjectures of Lucretius on a new plane of ever-increasing knowledge. Rousseau, in discussing the original nature of man, takes account of those of his time who believed that man's ancestors had once been hairy quadrupeds. The great naturalist, Buffon, emphasized the close anatomical resemblances between man and the higher animals, and said that it seemed as if nature might, if sufficient time were allowed, "have developed all organized forms from one original type." Lamarck, in Napoleon's time, wrote his famous

treatise on evolution (Zoölogical Philosophy). This sought to explain development by the transmission of acquired characters which favored the improvement of species. Fifteen years before Darwin's great work appeared, Robert Chambers, who prudently concealed his authorship, was preparing to shock the English public by his Vestiges of the Natural History of Creation, in which he says that the facts of geology induce him to classify the human species among the mammalia. So Darwin is in no way original in his assumption of man's animal ancestry, but only in the extraordinarily careful manner in which he sets forth the history of evolution as then known, and especially the ingenious suggestions he makes as to how the process proceeded. "Darwinism," as understood by paleontologists and biologists, means Darwin's theories of sexual and natural selection, the struggle for existence and the survival of the "fittest" of those variations which are always occurring in each generation of any plant or animal. In this sense "Darwinism"-or much of it-is perhaps as dead as Mr. Bryan or Senator Rash of Kentucky would have cared to see it. But it is dead because much that was unknown to Darwin has since been discovered, and if he were now alive he would be the first to confess that his explanations appear to have little or no value today.

Darwin's Origin of Species by Means of Natural Selection, or the Preservation of Favored Races in the

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Struggle for Life, which appeared in 1859, gave the first impetus to a general discussion of man's animal origin. Few people took the pains to read this careful, learned, and cautious work, but many there were to condemn it on hearsay. It was deemed not only a rejection of God's own word, but an attempt to dethrone Him. A French prelate happily phrased the sentiments of a great part of the clergy and laity when he said, "These infamous doctrines have their only support in the most abject passions. Their father is pride, their mother impurity, their offspring revolutions. They come from hell and return thither, taking with them the gross creatures who blush not to proclaim them."¹

But geologists and those familiar with biological and anatomical facts found the new ideas congenial to them. Sir Charles Lyell confessed that he was forced to change his opinions in view of Darwin's book. Huxley and Asa Gray supported its general conclusions. John Fiske reconciled evolution satisfactorily to himself and his many readers with a continued belief in God and in the immortality of the soul. Henry Drummond in his Lowell Lectures on *The Ascent of Man* (1893) assigned to disinterested care and compassion a great rôle in the survival of the fittest, and in his *Natural Law in the Spiritual World* he discovered, comfortably enough, that evolu-

¹Quoted by Andrew D. White in his *History of the Warfare of Science with Theology* (I, p. 73), where the reader will find a convenient summary of the mid-Victorian controversy.

tion was but a new name for Calvinism. Patrick Geddes, while he did not represent evolution as exactly a pinktea party, shoved the ravening maw and the bloody tooth and claw into the background. Accordingly, many onlookers decided that evolution was neither so impious nor so horrid as at first supposed. It could be accepted in a vague way without either dethroning God or degrading man. Of course, a vast number of religious people never accepted the idea, but they got used to seeing the word evolution more and more commonly used; and, meanwhile, mankind seemed neither conspicuously better nor worse for the new theories.

Indeed, the vocabulary of the geologist and biologist began to find its way into the discussions of human civilization and human struggles, and played a great part in sociological speculations from Spencer on. Huxley clearly saw the danger of this. He urges that what we call goodness and virtue "involve a course of conduct which, in all respects, is opposed to that which leads to success in the cosmic struggle for existence." In dealing with human aspirations we must be on our guard against "the gladiatorial theory of existence" (*Evolution and Ethics*). The Neo-Darwinism of a General Bernhardi quite outruns the militarism of the biological struggle for existence. Civilization, which is the peculiar and unique achievement of a single species of animals, is so peculiar and so unique that, while in a sense "subject to the cosmic process," it must be dealt with according to its own methods of development. While recent discoveries in embryology, heredity, sex, and so forth have a fundamental relation to the advancement of civilization, they belong to a realm which must not be confused with the history of human ideals and social adjustment.

But without going into this rather complicated matter, it may be noted that the open warfare between those who thought that they accepted evolution and those who knew that they did not died down at the end of the nineteenth century, but has now been revived in a somewhat modified form. This renewal of the controversy is due in part to the survival of much ancient ignorance and misunderstanding on the one hand, and the progress of critical investigation on the other. The irreconcilables have been encouraged to renew their attacks by the rumors which reach them that all the more progressive biologists agree that Darwin's theories are inadequate to explain evolution. So they jump to the welcome conclusion that evolution has died with Darwinism.

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Darwinism, in the sense of Darwin's theory of why evolution has taken place, may be dead or dying; but this, as we have seen, in no way affects the acceptance of man's animal origin; for this belief rests on observed facts, which have been reinforced rather than weakened

in the last twenty-five years. These facts belong to three general categories. First, there are the unmistakable indications to be found in fossil remains that life began hundreds of millions of years ago with simple water creatures; and it was a long time before the fishes introduced a backbone; and long after that before we have any vestiges of land mammals, which are indeed very recent innovations from a geological standpoint. Secondly, it is a fact, subject to verification by any amateur, that man's structure closely resembles that of all other mammals and is almost identical with that of the primates. His organs of sense and physiological processes are as similar as his bones and muscles. Some people say they hate to look at monkeys because they and their doings suggest a hairy travesty on man. Thirdly-and this is perhaps most striking of all-we each of us individually go through a most impressive evolutionary process, to which those who oppose evolutionary doctrines seem quite oblivious. The most stalwart and eloquent opponent of evolution was, a few decades ago, a single cell, less than one onehundredth of an inch in diameter. When we begin our baby albums the darling is already at least nine months old, and if we could only have a picture of Mr. Bryan or the late Rev. John Roach Straton when either was, strictly speaking, only a month old, it would be impossible for anyone but an expert to tell whether he was on

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the way to be a collie dog or a pet rabbit. This is a fact which anyone can see illustrated in the pallid little creatures to be found in bottles in anatomical museums. We go through strange vicissitudes in the womb, suggesting the various stages of animal development and, as is well known, do not neglect to recall the gills of the fish, the tail, and the hairy coating of remote ancestors. Each of us has actually recapitulated the history of life in a marvelous series of personal metamorphoses, which, to any fair-minded observer, makes the history of animal evolution look like a long-drawn-out but tolerably exact parallel.²

These are all readily verifiable facts which Mr. Bryan or the theological commentators of various creeds could have seen for themselves or have read about in any elementary handbook of embryology. Could these gentlemen have freely recognized these facts it would have enabled them to make plainer to their listeners why competent men of science take for granted that man is closely associated with the whole varied complex of organic life, and that, were our ancestry traced back a few hundreds of thousands of years, we have reason to suspect that we should discover our lineage merging into some still unknown and extinct species of creature with no vestiges

² This "recapitulation" is no longer interpreted as it was by Haeckel. It may only mean that each group has retained the same general plan of embryological development as that possessed by its common ancestor. See MORGAN, T. H., A Critique of the Theory of Evolution, Chap. I.

of human civilization, and ultimately into the line from which the animals most resembling man have also sprung.

These conclusions have been further reinforced by the study of human implements, beginning with the simplest flint utensils that have been preserved, and culminating through hundreds of thousands of years in modern inventions. The traces of this long and halting advance seem to prove that what we call civilization is an excessively slow process in its earlier stages, and leads us back inevitably to the supposition of an entirely uncivilized progenitor.

It is the habit of the more erudite opponents of the evolutionary theory to declare that the striking differences between man and all other animals set him off definitely from his simian analogues. Professor Le Buffe once published an article in the New York Times in which he declared that it is absurd to regard ourselves as "blood relations" of the apes, since our blood does not have the same chemical constitution, our pelvis is not so tilted as that of the chimpanzee, we live on different food and our tongues have different areas of sensitiveness. But this seems like saying that all the books on a shelf are not to be called "books" because some are thick and some thin, some in cloth and some in leather, some on coated paper, some on uncoated, some in twelve point and some in ten, some by Anatole France and some by Frances Havergal. The blood may differ, but there is the astonishingly similar vascular system; the food may differ, but there is the similar alimentary canal; the pelvis may be more tilted, but only the initiated could tell whether it belonged to a man or a chimpanzee. In short, the *differentia*, as the philosophers say, of man and those animals most resembling him, are no more striking than the characteristics which set apart all the innumerable groups of creatures on the earth's face. No one supposes that man is just like any other animal, but the totality of unmistakable and astonishing resemblances seems unquestionably to place him among the animals. That is all any comparative anatomist claims.³

It is in the field of embryology-the story of the hereand-now man, rat, fruit fly, or squash bug, from the egg to maturity-that the most astonishing discoveries have been made in recent times, rather than in the attempts to establish ancestral relationships by the study of fossil remains. It is quite impossible even to recapitulate these discoveries here; but the microscopic mechanism of heredity is gradually being revealed-the continuity of the germ plasm, the combining and dividing and shuffling of the chromosomes, indicate to some extent the background of heredity. The older idea, accepted by Lamarck, Spencer, and Darwin, that so-called "acquired" characters-namely, the experiences and knowl-

^aFor some of the more illuminating implications of our simian heritage, see below, pp. 174 ff.

edge gained by parents as adults—could be handed down hereditarily to their offspring, has generally been given up, for careful investigation offers but a few dubious instances, and the whole method by which the original germ cell develops—i.e. the immutability of the gene seems to leave little or no chance of its happening. But few laymen really clear up the exact nature of this issue, and the last word has by no means been said on the subject. It is obvious that the necessary surrender of the theory of the hereditary transmissibility of acquired characters greatly weakens the older explanations of evolution, but this does not mean that new and sounder theories will not some day be brought forth.

In addition to this new embryological knowledge, great progress is being made in the chemistry of life, the result being that men of science dedicated to this line of work realize that the processes involved are as yet so ill understood that it seems absurd to them to speculate on the general history of the organic world until far more is learned about the essential nature and operations of life. They do not question its unity and interrelations, but feel that it is highly premature to expect any easy and obvious explanations.

This conclusion is similar to that of biologists of our day. Darwin's hypotheses, including sexual selection, natural selection, and the hereditary transmissibility of acquired traits, now seem doubtful or unfounded, and in any case inadequate to account for the facts as they are coming to be known. William Bateson concluded his memorable address at Toronto some years ago with the words: "Our doubts are not as to the reality or truth of evolution, but as to the origin of *species*, a technical, almost domestic problem. Any day that mystery may be solved. The discoveries of the last twenty-five years enable us for the first time to discuss these questions intelligently and on a basis of fact."

IV

Just as more careful scientific examination has greatly altered our conception of God's world, modern historical literary criticism has revolutionized our notions of His Word. Mr. Bryan's fear that the acceptance of our animal origin would make the Bible "a scrap of paper" seems to rest on the assumption that we find in Genesis a consistent statement of man's beginnings. As a matter of fact, the early chapters of Genesis give conflicting statements on this subject. The creation of the first man and woman is described and the birth of their two sons, Cain and Abel; but when Cain slew Abel as the result of a quarrel over a matter of ritual, the population of the earth would seem to have been reduced to three persons. Cain, however, fares forth and founds a city which he names after his son Enoch. It has always been troublesome to explain this on the old theory of the Bible; but

as a French physician, Jean Astruc, pointed out as early as 1753, Genesis is evidently based on several different sources and these are in some cases hard to reconcile. So one might maintain that even Genesis hints at the existence of mankind before the creation of Adam and Eve.

Those who set the Bible over against any particular scientific theory or discovery ordinarily forget how many things in the Bible they themselves do not believe. Had Mr. Bryan listened to Thomas Aquinas, in the thirteenth century, he would have been assured that the Bible proved that he, as a heretic, should be sent to the stake. Had he lived in the sixteenth century, he would have agreed with Luther that the Bible established the necessity of burning witches, taught that disease was caused by devils, and that the sun revolved around the earth. Had he been a Southern clergyman before the Civil War, he could have justified negro slavery on the ground that Ham was condemned to serve his brethren. As one reviews these facts the Bible arguments lose their force. The Bible is not a manual of geology, comparative anatomy, embryology, or prehistoric archæology, but a groping after the Eternal, and if Mr. Bryan had only devoted a little time to the history of thought, he could readily have seen that any older notions about the Book of Genesis need not have interfered with his accepting man's animal origin.

The argument that if man thinks he is descended from

the brutes he will act like a brute can be met in similar fashion.⁴ All the iniquity under the sun which has gone on in Christendom for eighteen hundred years has, until recently, proceeded under the impression that we were sprung from Adam and Eve. Mr. Bryan might justly and relevantly have been challenged to point out any conspicuous wickedness on the part of those who accept the newer views as over against those who adhere to the older. I suspect that it would be found that almost all the inmates of the penitentiaries would have agreed with Mr. Bryan in regard to their common godlike origin.

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In view of these facts it seems to the writer that, instead of being in danger of stressing our animal origin and nature too heavily, we really run the risk of taking it much too lightly. It is the foundation on which we have to build. Even if embryologists and zoölogists should, as it may be hoped, make much clearer the processes by which the ever more elaborate organisms, including man, have developed on the earth, this will only show the vast gulf that separates the mechanism of advancing civilization from so-called organic evolution. Man is a species of animal, and must reconcile himself to remaining so, but he is capable of something that no

⁴In his final summation speech, which he intended to deliver at Dayton in 1925, Mr. Bryan referred to Dr. Barnes' moderate application of evolutionary concepts to ethics as "a loathsome doctrine."

other animal species is capable of, and that is the indefinite accumulation of knowledge and the application of this knowledge to changing his purposes and environment. *He is the only planning animal*. As his knowledge increases through the curious observations and experiments of highly exceptional individuals, his outlook broadens and his resources increase.

A recent writer, who has none of Mr. Bryan's presuppositions, has denied that man is an animal, although he admits that he has in general acted like one. In a way he is right-to the extent of his denial that we should consider human civilization and its possibilities in terms of biology. To recall a favorite analogy of mine, the case is analogous to that of the relation between the physical characteristics of the Island of Manhattan and the structures which have in the last three hundred years been reared upon it. It embraces the shores of seas and rivers, swamps, rocky hills, and level fields. All these can support various kinds of structures, from the wigwam to the Woolworth Building. Those who reared these structures had to take account of the underlying physical facts, but these did not determine the history of the city from the days of Indian villages to our own times. That is, the intricate development of civilization has gone on in spite of the relatively slight change which has taken place in the physical structure of the island during the period which has elapsed since Indian canoes landed on the

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banks where transatlantic steamers now find their moorings.

The recognition that mankind is a species of animal is, like other important discoveries, illuminating, for the simple reason that it makes possible more intelligent conduct. We are indeed, as a result of the study of comparative psychology, finally placed in a position where we can really understand the unique nature of civilization. We now grasp the nature of the human mind as we could not possibly have done twenty-five years ago, when quite fantastic notions still prevailed in regard to the animal mind, and consequently in regard to that of man.

Just as the architect has to consider the problem of a foundation for his building as well as its design and purpose, so we have to consider our foundation. Our animal nature is in many ways very ill adapted for sustaining the burden and ever-increasing weight of civilization. It is possible that eugenics may do something by selection to improve the breed and better adapt it to our task, and there are various lines of research which may render the individuals who compose the race today more hopeful and enterprising, and less timidly inclined to cling to routine. Among the things most essential to progress is the scrupulous study of our nature and a recognition of our inherent weaknesses. Mr. H. G. Wells has pointed out that we are *trivial* creatures, and this is one of the

most troublesome things in our heritage. We have no adequate natural perspective. Little things make a heavy impression on us, and we have only artificial means of conceiving and acting on large issues.

Man is by nature not an open-minded progressive creature, but, in general, one which distrusts innovation; yet large views and willingness to undertake innovation are exactly what is most essential in escaping from our present difficulties. If we could only bring ourselves to take into account and act on the knowledge already accumulated, if we could in some way distinguish between the relevant and the irrelevant, the important and the unimportant, the vital and the negligible, the progress of readjustment would be far more rapid.

In understanding these fundamental difficulties the knowledge of animal nature is really the key. Could I determine the course of education, I should pursue exactly the opposite policy from that once recommended by the Rev. John Roach Straton. I should bring up every boy and girl in the light of our modern knowledge and with an honest realization of our history and our animal nature as it is coming to be understood. Some progress is being made in this direction, but as yet those who prefer to rely on legends that originated in Mesopotamia several thousand years ago rather than accept the wonderful insight into the facts which has come with vastly increased knowledge, have the whip hand, and few pub-

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lishers of textbooks for the schools would venture to permit a writer to give children the best and most authentic knowledge that we have today in biology and anthropology. It seems to me that Mr. Wells, Mr. van Loon, and some others, by writing popular histories in which these facts are recognized, did a very great service. It is to be hoped that the recent attempts of those who, with little pretense to scientific knowledge, endeavor to block its dissemination in the schools have stirred up a sufficient reaction on the part of the more intelligent of the population to encourage textbook writers and their publishers soon to put the case more clearly than can now be done.

CHAPTER III

NEW CONCEPTIONS OF MAN AND HIS WAYS

Nor only have the scientists in the last hundred years taught us that man is all in the last hundred years taught us that man is physically descended from earlier forms of organic life. They have also made it clear that our mind has its animal origins as well, without a knowledge of which we cannot intelligently understand human ways of thinking. Anthropologists and students of cultural history have explored that long period of human development prior to any written records-more than ninety-nine per cent of all human existence on our planet. They have described the long and tedious journey along man's "rough road" from abject savagery to twentieth century civilization. All these studies have opened up a whole new panorama, not only to historians but to students of the social sciences and public affairs in general. The material brought forth is invaluable for understanding human behavior in all ages. It enables us to know what it means to behave like human beings, and why we do so behave.

For what, then, are we indebted to scientific discov-

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eries of the last seventy-five years—discoveries made by biologists, anthropologists, and comparative psychologists? What are the main facts about mankind unknown or unrecognized by practically all writers on human nature and conduct seventy-five years ago which are generally accepted by scientific investigators today? Little can be said here about anyone of them, but in the aggregate they form an imposing mass of new knowledge upon the basis of which it may be possible, as time goes on, to reform humanity by abolishing many longstanding fears, disorders, and disgraceful practices and raising mankind to a higher plane of insight and contentment.

The older writers about man had little interest usually in his history. They knew almost nothing about his career in Europe before the Greeks. In Christian countries it was supposed that the first man and woman were created with fully developed speech and a fine degree of intelligence about four thousand years before Christ. During the past seventy-five years it has become clearer and clearer that men have been living on the earth for perhaps a million years, running about on their hind legs, and with a unique bodily equipment which has enabled them very gradually indeed to amass the knowledge and arts of which they are now possessed. Some of the earlier skulls would indicate that there were once

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human races which did not have as good brains as those which developed later. Originally men lived like wild animals, without fire and clothes or much in the way of speech. But they differed sharply from all other creatures in their power to make discoveries which could be imitated by the young or adopted by one tribe from another.

In bodily form and physical functions man resembles very closely apes and monkeys. Like them he begins his physical existence as a tiny egg, and his organs suggest for a short time in his mother's womb peculiarities of a fish. He retains through life muscles to wag a tail or move his ears. Most of those who reject man's animal genealogy have never taken the trouble to see how they looked when they were an embryo six weeks old. We never get over being an animal and some of the worst mistakes of the past have been due to the failure to recognize ourselves as animals. Those familiar with the incredible powers of animals and plants big and little feel no shame in freely accepting their share in the stupendous miracle and mystery of *life*.

There is a variety of evidence to indicate that men lived as savage hunters during ninety-nine per cent of the time they have been wandering upon the earth—so slow was their progress in the beginning. They had learned during this period to make a fire and probably to clothe themselves in pelts, and to talk better and better. They certainly greatly improved the shape and in-

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creased the variety of their flint tools and weapons. Only some twelve thousand years ago were spinning and weaving, pottery, crops, and domesticated animals added to man's heritage. He became a farmer and shepherd as well as a hunter and fisher. He had no easy way of gaining his daily food, however; he knew nothing of reading or writing, of cities and fine buildings. As yet he was more ignorant than the lowest savage to be found on earth today—and yet he had bread, fire, and clothes.

About the time that, according to the ideas of a hundred years ago, the first man and woman were created, the people of the Nile Valley were rapidly outrunning all that humanity had previously accomplished. They had begun to write and read, to construct stone tombs and before long to gather in towns, rear magnificent temples, employ copper instead of flint, and work gold and precious stones into designs difficult for our best artificers to imitate today. They wrapped their dead in linen sheets of wondrous fineness and dreamed strange dreams of the life to come. This is, of course, recent history. The Egyptians and still more obviously the Greeks, with their noble sculpture, based on the statues of the Egyptians, their temples, vases, dramas, and bold philosophizing-all are very close to us when we consider the long dark period in which for hundreds of thousands of years savage man was making the discoveries upon which all civilization has ever since depended. The rest

of the story was fairly well known to the older guides of man, except for our own Age of Surprises, which has upset so many settled calculations of the past. Or it would be better to say should and will upset them. For it is too soon for many people to perceive the great revisions of belief that this tremendous extension of man's history and his so very recent discoveries demand. We are not used to the notion that, could we trace our ancestry back we should find it soon merging into that of illiterate savages and finally into that of wild animals. This assumption can, however, become the most clarifying, even the most cheering and comforting of any suggestion that has ever been made about man's origin and fate. It serves to wipe out a vast number of puzzles which have hitherto harassed those who sought to solve the riddles of human conduct and feeling. It greatly simplifies our attitude toward ourselves and others. While it sets up new problems it eliminates old ones. It should beget at once patience and toleration, and at the same time hope and emulation. It should fill us with wide-eyed wonder at the tragic struggle of mankind against ignorance and incapacity rather than with peevish despair over his failures. Let as now look at some of the strange new ideas that have come with the discovery that men were once wild animals and that what we call civilization in its more elaborate developments is a very recent thing in human history.

Π

Not only is the whole human race derived originally from wild animals, but each boy and girl enters the world as a wild animal. Nothing in the way of civilization is inborn, as are the form and workings of our bodies. Everything that goes to make up civilization must be acquired anew in infancy and childhood, by each and all of us. Had we been born in a tribe of Australian aborigines we would have learned to talk and act as they do. We should have known nothing of reading and writing, and would have believed all the things told us and could not help it. If with the same capacities that we now exercise in making terms with the complexities which surround us today we had been born in China in the time of Confucius, or in Rome in the days of Augustus, we should have acted and believed as did those around us. Accordingly, we have little personal responsibility in regard to our ideas of right and wrong, of the proper and improper because we had nothing to do with them. They were imposed upon us. The same is true of our religious convictions and conceptions of duties and obligations. Rarely do we come later to doubt in any comprehensive fashion what we are taught in childhood. Early beliefs seem self-evident and in the case of many people they are not seriously modified throughout life. We find ourselves often left with no

other defense than that father or mother taught me thus and so and it seems a wretched form of treason even to listen to a questioner. Moral leaders like Dwight L. Moody, Anthony Comstock, William Jennings Bryan, Frances Willard, Clarence True Wilson, John S. Sumner, to cite a few conspicuous instances, never altered their childish notions about how to live and what to believe. They either left unread or cast aside all works that would have given them truer and more critical information about the Bible. Their strenuous careers were devoted to urging others to accept the ideas which they themselves happened to have been taught before they were twelve years old; and make everyone stop doing the things which they had been told as children were naughty. All of them made a wide appeal because they found plenty of sympathizers, in the same plight as they.

The human offspring is at the start a sadly helpless and utterly dependent thing. It can get its food from the first, in the manner of a dog or calf, but months elapse before it can walk or talk. It fumbles with its blocks and toys and gradually learns to manage them, cultivating thereby a sense of shape, hardness, weight, and balance. Blocks will not roll, but balls will. The child's parents begin to tell him the things which they themselves learned as children. He is defenseless against the prejudices of his elders whether they be Hopi Indians or live on Park Avenue. A very charming book appeared a few years ago, called The Mirror of Witches, which shows how the people of New England brought up their children to attribute their pains and discomforts to bad persons who made "poppets," and by sticking pins in them afflicted those they disliked. The most learned clergymen and judges of the time had been taught the same ideas when children and continued to hold them their lives long. It seems rarely to occur to us that had we lived in Salem in 1692 we should inevitably have clung tenaciously to beliefs that seem to us now baseless and cruel. But we are still in the same plight. We have all been taught and continue to believe many things that would not bear reinspection. It has been my particular and conscious effort to revise my childish impressions, and now I find myself farther away from myself at twelve than at twelve I was removed from the famous Boston witchmonger, Cotton Mather. I could write out a long list of items which I have rejected or come to accept since I was in the high school. And yet in moods of depression I readily perceive all sorts of childish fears and scruples cropping up. I never really got over trying not to offend my mother, whom I never disobeyed, although I did plenty of things which she had not happened to forbid but of which I suspected she would have disapproved. These personal reminiscences are introduced merely to set the reader wondering about himself. My case must be a common one, although rather

exaggerated, by a perhaps unusual tendency to miscellaneous speculation and questioning. It is hard, however, to believe that if I were now twelve with the particular outfit of impressions and beliefs I at present have, I could possibly alter them in so thoroughgoing a fashion were I to live amidst the influences of the coming fifty years. Is this merely another instance of the childish impression of finality or a plausible conjecture that during the next fifty years mankind will be mainly engaged in growing up to what has been discovered during the past half century? This process will involve, no doubt, much increase of knowledge and many rectifications of the beliefs of those who have taken the most pains in reaching them. At least the discovery of man's animal origin, of the methods by which civilization has been built up, including the ready impressionability of childhood and the permanence of beliefs acquired when we were inferiors and dependents will not be surrendered but expanded and utilized to make education something far more efficient than it could be when the mistakes of the past played so great a part in its conception and methods.

III

Mind is considered man's chief glory and the instrument which has enabled him to accomplish all the wonders of civilization. He can reason as no other animal and so has devised many religions and arts and institutions, built up imposing systems of philosophy and theology, acquired knowledge of the world and its inhabitants and sought out many inventions to feed, clothe, protect, adorn, and amuse himself in ways unknown to his savage ancestors. Great and essential is the mind! But how different are the conceptions of it which are now being brought forward from those of the past. There is even a rumor that some investigators deny its existence altogether. This seems at first sight perfectly preposterous. Without a mind how is our rational conduct to be explained? There must surely be something in us that plans, wills, decides, that makes inferences from the past and conjectures in regard to the future, that is our constant guide in all we do. Only one who has lost his mind could be so absurd as to deny its existence. Have not the philosophers written long treatises on the mind? John Stuart Mill defines it as that "mysterious something which feels and thinks." And I suppose that this would appeal to most people as a good short statement.

The recent emphasis given to the study of animal behavior, coupled with the new assumption that men themselves were not long ago (from a geological standpoint) leading lives not so very different from the creatures nearest them in form and capacity must surely alter for us the opinions of our forefathers who had none of this new information. Again, the development of infants and children, who seem to show little signs of "mind" when they are born, suggests a new theory of thinking which makes it possible to dispense, as some believe, with that "mysterious something" which has hitherto been "mind" or "reason." It is very difficult to state this change of attitude in any short and clear way, but some little notion may be given of the trend of the more critical thinking of today.

Our thinking depends upon words, as will later be explained. Now it has always been possible to use words that did not correspond to things or experiences and to make sentences that sounded as if they meant something, yet did not. One of the signs of the times is that scientifically-minded people are becoming much more careful about the terms they use. Mephistopheles reminds the student in Faust that he will not get far in philosophy and theology if he does not learn to employ words that have no very clear significance; that it is far easier to use a word than to find a meaning for it. Francis Bacon complained that the medieval philosophers used a great many words, especially "essence" which was just a word not a thing. Modern critics are pointing out that almost all former philosophers dealt with many "concepts" which were purely imaginary. Plato, for example, refers to "The Good," "The True" and "The Beautiful." He seems to imply that they existed somewhere or in some way independently of things, acts, and thoughts which

we find ourselves pronouncing "good," "true," and "beautiful." There was long and heated contention over this phase of the matter during the Middle Ages. Now various writers are beginning to wonder whether there is anything in the processes which each of us observes within us of thinking, remembering, imagining, reasoning, deciding, which makes it necessary to assume that there is a single agent or "mysterious something" that dwells within our bodies and performs all these difficult tasks, whether we call it mind, intelligence, will, or reason. We may say that our digestion is good or bad, but if we have any knowledge of physiology we mean no more than that a very intricate series of chemical processes and muscular actions take place either smoothly or distressingly. We do not believe that there is a commander-in-chief looking on and giving directions or misdirections. Once men thought heat and cold were entities and that they might be mixed in different proportions, for this is what "temperature" originally meant. Now we know that the molecules merely change the rapidity of their movement and chemists have discovered the point where all molecular motion ceases and nothing can ever be colder than that. So heat and cold are not things, but just processes.

These illustrations will show why in recent attempts at clear thinking there is a tendency to beware of such words as the mind, reason, the will, and even conscious-

ness and especially the recklessly-employed expression "the unconscious." All these look like imaginary agents rather than observable processes. We cannot do more than take note of how we and others behave; how we ourselves think and feel and how others tell us they think and feel. This is all the data available. And in trying to understand human behavior in this comprehensive sense it does not help, but heavily hampers, the investigator to try to bring in the mind, reason, or the will. He is afraid that if he does so he will drop into the old easy habit of substituting mere words for actual happenings.

Formerly it was customary to make the sharpest possible distinction between mind and body. And all sorts of efforts were made to bridge the gulf between them or explain how the mind, being immaterial and without substance, could direct and control the action of arms and legs, which are heavy material things. No one ever reached any satisfactory solution of this puzzle. It seemed easy to explain how, if a stone were thrown into a lake, it would make a splash, because matter could work upon matter. But how could the mind which was not made of matter cause your hand to reach for a stone and heave it into the water? It is one of the most astonishing results of recent thought that this hoary old question is getting answered, partly by dropping out old assumptions on which the philosophers worked, partly by new knowledge. It must be remembered that Christian teachers have almost always had a contempt for the body which perishes and a sublime conception of the importance of the soul which they believed to be eternal, destined to survive forever either in a state of ineffable bliss or indescribable torture. In dealing with the mind and with reason the philosophers always had this conception of the soul in the background. They also felt the body to be its transitory instrument. It was made of matter, and matter to them was dead, contemptible stuff in which the soul was imprisoned. The ascetics systematically maltreated their bodies as vile enemies ever dragging them into temptations. The flesh was a millstone hanging on the neck of the spirit. While philosophers were rarely ascetics, they could not but be deeply influenced by the religious doctrines which they accepted. They thought of matter as inert and they knew very little indeed of the vast stream of life which had been flowing down the ages and out of which man finally emerged.

No present-day chemist or physicist would think of matter as inert and impotent stuff. They know that it is filled with indescribable activity. It is on the go every instant, never by any possibility at rest. It keeps constantly rearranging itself into new designs each with its peculiar properties. The chemists have learned to make substances which never existed before. They become creators who, owing to the still unexhausted potentialities of atomic and molecular combinations, can make any number of lovely dyes and perfumes out of black, malodorous coal tar.

As regards the human body, if one will but find out how it is made and how it acts, it fills one with a veneration akin to religious awe. The old ignorant talk about the body indulged in by those who pride themselves on their spirituality seems downright blasphemy. There are at least fifteen thousand different species of animals whose bodies consist of one cell only, so small that you can rarely see much of their form and ways without magnifying them from three hundred to five hundred times their size. If they are the size of a fine needle point, say a hundredth of an inch across, they can with the microscope be made to appear as big as a mouse or a rabbit. They all make a living by hunting or trapping, they can evade danger, learn something by experience, have signs of a memory, adjust themselves to novel circumstances and propagate their kind in many different ways according to their nature. It would be well if some clergymen would magnify the Lord by magnifying a stentor or lacrymaria. But it is cheaper and easier to dismiss biologists as "materialists" than to be God's playfellow. From the very first all living things exhibit a certain awareness of surrounding objects; act purposively in protecting themselves, in getting a livelihood and in reproducing. The very little creatures of which we have been speaking have no eyes, ears, or noses. They

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can feel in their blindness and they have something corresponding to taste, for they will eject things which disturb them. Yet we hardly think of them as having a mind or reason. It is in their nature to behave as if they did. All that has been recalled above it will be noted is the statement of facts which anyone can observe who will take the trouble. They are not quoted from some revered authority, nor are they assumptions. They seem to be just plain facts. I have seen this much myself.

Man's body has a history reaching back to one-celled creatures. Each generation had to get enough to eat and protect itself long enough to produce a succeeding generation. When man took on his present bodily form he had to do the same things in order that you and I should be here to consider how we came about. He had the foundation of astounding viability or keep-going-ness before he exhibited any evidence of what we call mind. Like a dog he could dodge a falling tree without knowing anything as yet of the laws of gravitation. He could climb a hill with no notion of musculature. He could eat a banana without being able to classify it botanically. He was so made, however, that he could handle things more dexterously than any other animal and so could judge of their weight, softness, and hardness, warmth and cold, form and texture, rigidity and pliability. Apes' hands are not so well made for manipulation as man's, and hoofs, paws, and claws are poor instruments for

finding out much. Man, too, had a better brain than any other creature. He could make more use of what he found out. This is an obscure matter indeed! The main point is to show how it is possible to conceive of man starting with the ways of an animal and gradually learning to make distinctions, inferences, gain clearer memories, imagine more vividly, imitate more consciously, and finally experiment and plan. This means nothing less than that he was very gradually getting a "mind," superior to that of any of his predecessors and with promise of indefinite increase. Mental processes are, in short, the chief elements in civilization and increase along with man's other arts. They are not a "mysterious something" implanted in every human being, but a slowly developed awareness of things and the capacity to make more and more discoveries and see how they can be used to better human conditions. The current information and its application prevailing in any group of people is handed on ready made to every child. There can be indefinitely more "mind" accumulated as time goes on, now that we have the trick. Never was the "mind" in general so good as it now is; it has been vastly improved during the past fifty years, and there seems nothing to prevent it from being vastly better fifty years hence. Evidently the mind and body are not separate things. The body antedated the human mind by hundreds of millions of years and we may expect a great increase of wisdom when we get over the older notions of the mind being an independent entity aspiring to go its way regardless of the shrewd old organism which has proved its ability to manage living so long before the mind came into action. Man's new acquisition "mind," while it has enabled him to generate and develop civilization, has not the well-tried inerrancy of bodily processes and has consequently led to many sad mistakes.

IV

One of the most fundamental characteristics of mankind is his talking. Only very lately, however, has language begun to be understood and its origin is by no means so mysterious as it formerly seemed. Older writers were prone to define speech as a method of conveying ideas. They also set off words sharply from acts. It would appear, however, on more careful inspection that words and sentences are rarely and exceptionally employed primarily to impart ideas; and that they were in the beginning and have continued to be overt acts. They are part of human conduct, beginning with noises and cries such as many creatures beside man are accustomed to use without any apparent expression of an idea. And man's bark like the dog's can often be worse than his bite. A scornful taunt consisting of mere words may produce a bruise more painful and lasting than a kick. To be told to "get out" is as effective as having the door

slammed in your face. A letter made of just words may function quite as poignantly as actual caresses or a spanking. Business is largely transacted by written promises. By just talking, clergymen, teachers, politicians, lawyers, and editors can make a living-for their words are as marketable as would be the apples they might grow or the shoes and stockings they might make. A recent writer has pointed out that among savages silence is an unfriendly act. When human beings meet they are expected to make noises of some kind, and the fewer ideas conveyed the better. Of course words are employed too to convey ideas and information, but very commonly they are gestures made with the vocal organs rather than the hands or shoulders. If we will but observe our own words and those we listen to or find written in books, newspapers, or on stock certificates, we can hardly fail to agree that words are acts intimately associated with all our other actions.

The sounds made by various birds and quadrupeds have been found to be practically associated with getting food, defending themselves, and the process of mating and rearing the young. Man can now make so many kinds of noises that there is every reason to guess that he was a great chatterer from the first. His exceptional powers of observation, experimentation, and his intricate brain cortex enabled him to discover new ways of using his vocal organs as he learned new ways of using his hands. As he made discriminations and distinctions he could reinforce his discoveries by making a peculiar sound, which led in time to the familiar process of creating names which could be used when the various objects or situations could not be pointed to or described by gesture. He began to be able to tell about things and each name accepted by the tribe served to set off some particular thing more clearly than hitherto from the gross mass of vague impressions. A name sharpened each object and act and thereby made thinking clearer. For example, when one learns the terms for the various parts of an automobile he is sure to understand their intercorrelation and functioning far better than he could possibly do if he just looked at it as a whole. So man's progress has come with making distinctions and salting them down with names, and this helped him to get more understanding and also to raise his untutored children to the degree of understanding prevailing in the tribe.

The infant, starting as a speechless little animal, first learns that vague noises bring relief when he is hungry or suffering from a loose safety pin. Before long, however, he shows a passion for naming things, accepting sometimes those suggested by his elders, sometimes preferring his own. Dr. Watson has often called attention to the fact that what we call thinking is just talking to ourselves. While there may be some reservations to be made, I believe that anyone who will watch himself will find that this is essentially true. Between each sentence as I am writing at this moment I find myself talking a little to myself, about what Wundt, Jesperson, Mrs. De Laguna, and John Watson have said about talking, and am asking various questions as to how much better we might get along with ourselves in controlling strings of disagreeable memories and apprehensions if we did but ask ourselves "why am I carrying on such a fool and fruitless conversation with myself? I should be infinitely bored if I had to listen to anyone else making such idiotic remarks."

I have learned to talk to myself in terms of the discoveries, or suggestions and guesses, if you will, sketched out above. It seems as if they were much nearer the actual happenings in the history of mankind than those taught me when I was a boy. Many old problems disappear, lifted off as was Christian's pack. New perplexities take their place, but they are real rather than imaginary. This chapter is not a formal argument for the new ways of viewing ourselves, but a scant statement of the notion of man's nature and origin which I suspect will gradually prevail. We are in a way satiated with the mechanical miracles of the last seventy-five years and have come to expect new ones of the same

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sort. We have now to recognize that a scientific study of our own nature in the light of the past and present may open up a second period of miracles which will make us far less ashamed of man's doings than we find ourselves today.

CHAPTER IV

MAN AND HISTORY

The chief part of man's life is remembering. He is ever busy day and night recalling his past joys and woes. His memory enables him to quarrel with his record and plan its improvement. All his explaining and aspirations depend upon his power of recollection. All learning consists of accumulated memories, whatever one's lot in life. The physician, lawyer, and man of business; the electrical engineer, the musical composer, the philologist—each has his special stock of reminiscences upon which he bases his procedure. So we are all perforce historians, constantly recalling the past, or else we land in the insane asylum.

The professional historian differs from the rest of mankind in his attempts to extend his memory far beyond the ordinary range. He is not content to remember what has been going on in and around him during his lifetime, but must needs get hold of ancient records, unearth ruins, and exhume the dead and buried. What we call history is an enlargement of our current recollections. It far outruns our personal experiences and the tales told us by our contemporaries, which constitute the bulk of most memories. Now, since all insight and understanding evidently depend on memory and the use we make of it, the rather invidious question arises, does this exceptional enlargement of the historian's memory tend to make him an uncommonly wise person specially equipped for finding his way about in the maze of life and qualified to advise his fellows?

Two of our most distinguished recent presidents were historians, but it is doubtful whether it was a popular recognition of this fact that led to their elevation to office. It must, however, have had some part in giving them a world renown which others operating upon a narrower margin of memories have failed to achieve. Our whole civilization is a historical product, and it is the business of the historians to impress this on our minds and make it a commonplace of thought and practical calculation. So far they have not met their obligations very satisfactorily. The reasons for this are not far to seek.

Some years ago, an American historical student, Professor Clarence Alvord, contributed his "Musings of an Inebriated Historian" to that sprightly magazine, *The American Mercury*, in which one was supposed to speak his mind, regardless of common prudence. Mr. Alvord had devoted a great part of his life to editing documents relating to French settlements in the Mississippi Valley and had written two volumes on British colonial policy in that region. He told us that as a professor he performed the acts that were expected of him "and in great quantities," but as he looked back on his labors they seemed to him vanity, as well as similar labors on the part of others. The Zeitgeist proffered him a cocktail "mixed with ingredients of powerful efficacy" which brought him both the conviction that historical study was futile and the courage to express this view with no reservation. "The gin was distilled in the hellish fires of the World War, the French vermouth was the essence of propaganda, the sweet Italian vermouth was the aroma of pragmatic philosophy, and the orange juice was squeezed from the cynical soul of Henry Adams." Alvord rightly claimed that the World War was a test which our historians failed to meet. They were the victims of every delusion shared by the most simple-minded. A few, it is true, made some pertinent if feeble reflections, but in general they employed their enlarged memories to attest the prevailing misapprehensions, to reenforce national feeling, and fortify the indiscriminate denunciations of the enemy. Some of us, to be sure, now like to imagine that we put on the war paint as late and as sparingly as we durst.

All this only means that history teachers are much like other people. They are indisposed to permit the results of their special studies to alienate them from the notions which pass for virtue and common sense in their com-

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munities. They have, as Mr. John A. Hobson has pointed out, quite "genuine class sympathies and interests," like everybody else. The tendency of teachers to conform is the result not of coercion, but comes no doubt, as Mr. Hobson conjectured, from their prevailingly timid and conservative disposition and their anxiety to stand well with the doers—professional and business men for whom they have a secret admiration. "They are not so much the intellectual mercenaries of the vested interests as their volunteers." In any case when they teach and when they write they are apt to be dominated by academic notions of dignity and respectability rather than a desire to use their historical knowledge to set their students and readers to thinking about and criticizing established habits and ideas.

Yet I am inclined to guess that no inconsiderable number of college history teachers today, after a cocktail with components less virulent than those of Alvord's, would express full concurrence in his conclusions. They might suspect, however, that the trouble lay a good deal in the kind of history Alvord had in mind.

As the years go on, history has come to seem to me a more and more vital matter; that it should not be regarded primarily as an accumulation of information about the past, but as a means for cultivating intellectual freedom and sagacity. This precious historical-mindedness, so essential to estimating man's plight, has hitherto

been rare even among historians. It is a realization of how things come about that counts. It opens our eyes wider upon matters as they now stand and at the same time suggests more ingenious ways of forwarding their improvement than we are likely to discover without its aid. The past loses its sacredness and we are no longer its slave. We become free to reconsider and even to neglect its dictates when we realize their often quite stupid origin and their thoughtless transmission to us.

But taking history in the usual sense—that is as a record of the past doings, conditions, institutions, feelings, and faiths of mankind—are there not certain instructive trends to be observed in human affairs? Does not the recollection of man's former conduct yield important hints of the habitual ways in which he acts? Are there not valuable conclusions to be drawn from the ways things have gone which make clearer the ways they are now going and are likely to continue to go? This is not a new question by any means, but we have reached a stage of thought and knowledge which makes it wise to reopen it with the hope of finding better answers.

11

In the eighteenth century, to go back no farther, the German poet, Herder, turned aside to establish certain "laws" of history, which should form a sort of human parallel to those laws of nature that were beginning to impress even poets. As time went on came Hegel with his *Philosophy of History* which claimed that each distinguished civilization of the past represented a stage in the development of the World Spirit, which was evidently becoming more and more noble-minded and sophisticated through the ages and was utilizing the genius of the German peoples to exemplify its highest achievements up to date. More recently a neo-Hegelian, Benedetto Croce, has again traced the story of the "Spirit."

The "philosophy" of history, as represented by these and many less notable writers, is held in abhorrence by those who engage in, or at least revere at a distance, historical research. They are convinced that those who have philosophized most confidently about history had no more than superficial and antiquated information about the past, and that they were inevitably rearing their majestic structures on misapprehensions. Toil and patience are necessary to collect and present such facts as may be discovered about the policy of an ancient king, or even the origin and effects of a single one of his edicts. I have on my desk the history of a mathematical manual used for centuries in medieval schools, the Introduction to Arithmetic by Nicomachos of Gerasa (who lived in the first or second century). The account of the life and philosophy of the author, his authorities, the complicated story of the manuscripts of the work, and the explanations of the many commentators who have, through the

ages, sought to interpret it fill about two hundred large pages, with hundreds of footnotes giving references to the sources. This is an instance of how much trouble it is to find out about one popular old textbook. The late Professor Thomas Francis Carter, dead ere his prime, spent years collecting information on the invention of paper and printing in China and its spread westward. Our present civilization is based on paper and printing, and hitherto we have had very sketchy and erroneous ideas as to how its foundation was laid in the early Christian era in a remote and often ignorantly despised country.

It is no great trick for one so minded to stake out a claim in historical hinterlands and to work so hard and find so much that those seeking the soul of history in a handful of out-of-date manuals and books of reference appear to him wholly negligible if not absurd.

Yet making full allowance for what is still undiscovered and not likely ever to be known, and for all that is tucked away in nooks and corners where it escapes even assiduous students of the past, is there not after all an astonishing amount of historical information available which will in all probability never be seriously revised? It seems to me that there is. For some decades the standards of historical criticism have been high and are not likely to be raised. Gibbon with all his patience and insight seems to a historical student of our day to have played somewhat fast and loose with his sources. And yet, compared with his predecessors and contemporaries, he was astonishingly exacting.

In the interpretation of what is known and is being learned two great changes are in progress, but scarcely as yet beyond their beginnings. One is the growth of historical-mindedness which will enable future writers to give history far more importance than hitherto in the useful enlargement of our memories by showing not so much how things were as how they came about. The second is the appreciation of the current discoveries in regard to man's nature contributed by biologists and psychologists and reënforced by anthropologists.

To offer a single example—the rulers, heroes, sages, saints, and conspicuous rogues of the past are now being reckoned with as human beings rather than as historical celebrities. They had mental and bodily disorders and dislocations even as we have. These must be taken account of in our historical explanations. Gibbon relates with evident pleasure various anecdotes which had for him the gamey relish of indecency. To the historian who possesses some little acquaintance with abnormal psychology, the pornographic becomes scientific. We are now in a much better position to estimate Nero or Theodosia than was Gibbon; even godly men like Luther and Calvin bear looking into.

An Australian physician has recently shown that Joan

of Arc was a tomboy before she was a saint; that the black pox which afflicted Henry VIII played a great part in English history during his reign and down to the present; that the hardened arteries of Charles V had their importance in European history; that the manifold disorders of James I, and the distaste of Frederick the Great for bathing are by no means negligible in estimating their careers.

These considerations lead me to dissent heartily from Alvord's conclusion that history is necessarily vain. It has hardly had a show so far. Mr. Wells in his *Outline* of History set a new standard for historical writing. He reached a very large number of readers and could hardly have failed to influence their opinions in a beneficent way. It is easy for the professional historian to quarrel here and there with his statements, perspective, and allotment of space, but who among them can equal him in his insight and felicity of expression! The mood of his work seems to me a harbinger of great things to come.

m

A few years back Professor Cheyney of the University of Pennsylvania discussed before the American Historical Association the very question we are here asking: In our present imperfect state of historical knowledge do certain tendencies in man's ways emerge which may enable us to understand his habits better and to attain to a

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more intelligent method of improving his ideas and practices?

Professor Cheyney cannot come under the suspicion of being a catch-penny philosopher; he is a real historian who would pass muster among the strictest sect of the historical Pharisees. His two volumes on the later years of Queen Elizabeth's reign sufficiently prove his capacity for research and understanding. Most tentatively and modestly, in the address above referred to, he suggests six "laws" which seem to him to be illustrated by the course of human affairs.

The first of these is what is known as the continuity of history. It is generally recognized by all who deal with the past. It means that in the great majority of cases one generation goes on doing and believing what the previous one did and believed. It is not true that there is nothing new under the sun. This carries the law too far. But the new prevails gradually and partially and, compared with the traditional, bulks much less even today than is usually believed. As examples, the Protestants in Luther's time agreed with the adherents of the older Catholic faith in most respects, and still do from the standpoint of an outside observer, such as a Japanese Buddhist. The radicals of the French reign of terror were in the main unconsciously conservative, as are the Bolsheviki today. We still keep the division of the day into twelve hours, as established by the Babylonians, and of

the circle into three hundred and sixty parts. The efforts to reform the calendar or get rid of primitive inches, feet, furlongs, grains, pennyweights, and the rest meet an opposition in this country which no recommendation of the convenient French revolutionary metric system can at present overcome.

We are far less sensitive to inconvenience than to the unusual, which is, of course, an inconvenience in its beginnings. Some hated to face the prospect of "getting up an hour earlier" every morning when the daylightsaving plan was introduced against the protests of the defenders of God's time. Custom is the god all of us revere except a few who have come to see the casual way in which habits get formed and the pertinacity with which they are transmitted from generation to generation.

Professor Cheyney's second "law"—and it should be said he has many reservations about the use of that term, and I have many more—is the impermanence of nations and states. Kingdoms, empires, city-states come and go, and now and then reappear on the map, as in the case of Poland, Serbia, and Bulgaria. One does not have to go back to the political changes of the Nile valley, Mesopotamia, India, or China to find illustrations. A comparison of the map of Europe in Louis XIV's time and that of today will give adequate modern instances.

Then, third, there is the general unity and interaction

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of humanity. As historical and anthropological investigations go on this fact becomes more and more securely established. Each people in any age owes a great part of what it has and thinks to older and often very remote peoples. The "diffusionists" among the anthropologists such as Sir G. Elliot Smith and the late Doctor Rivers point out many astonishing instances of the migration of inventions and customs. They feel that it is so hard for anything new to be found out and get adopted that it is safest to assume that innovations are imported rather than that they arise independently. This sense of indebtedness might, as Mr. Wells urges, become an important moral sentiment in forwarding a real brotherhood of man. It is a special aspect of the continuity of history which our blustering patriots and nationalists are too ignorant to realize.

The fourth "law," at least in modern times, is the steady prevailing of democracy. Politically this has exhibited itself in the right extended to all men and women to participate nominally in the selection of their governmental representatives. There are some impressive indications that the notions of free government held by nineteenth-century liberals may be superseded before the end of the twentieth. But the right to vote is but a byproduct of a far reaching tendency toward social equalization and uniformity. There is socialism, "equal opportunity for all," "social justice," mass production and its agent, advertising. Business men talk in terms of "service" and social duty. Underlying these manifestations of democracy are the public school, the ability to read, and the whirling printing presses.

Professor Cheyney's fifth point, the steady enlargement of liberty, is associated with the previous one. It will cause some complicated reflections in many minds. It is true that the grosser forms of slavery and serfdom have gone, and their disappearance is impressive. Moreover, since the French Declaration of the Rights of Man in 1789, most national constitutions have proclaimed various kinds of freedom; and we like to think of the United States as begotten in Liberty. Just now, however, there seems to be a sort of revulsion against personal freedom, not only in Soviet Russia, and in Italy, Germany and other Fascist states, but in the United States. In this land of liberty we have many "defense" leagues; conscription, the Lusk laws and the criminal syndicalism legislation are still fresh in our minds. The Ku Klux Klan and the Fundamentalists have been busy securing to everyone the imprescriptible right to believe what one's ignorant neighbors believe. Aldous Huxley has wisely said that liberty is something not given but taken. This is likely to remain true. Genuine tolerance demands a degree of intelligence which outruns that which even exceptionally sophisticated persons possess today. There

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are, nevertheless, various modern circumstances which tend to promote liberty and self-determination.

I should be inclined to substitute for Professor Cheyney's "Freedom" quite another word, namely "Possibility." Our age, owing to all sorts of novel devices for disintegrating routine and tempting invitations to escape from it, offers us more choices than ever before. Mrs. Grundy finds it impossible to be ubiquitous in a large city. Even in smaller communities she cannot listen in on every telephone conversation in a public booth or chase every runabout or flivver. It is not her fault; circumstances have got too much for her. Like Chaucer's widow, she is "somdel stope in age" and not spry enough to keep up with newer and more ingenious ways of eluding her virtuous attempts to make everything right and proper. And then the psychoanalyst says things about her motives which quite upset her. She is no longer so sure of herself.

Modern conditions and possibilities and the multiplication of options are producing an emancipation far more fundamental than the mere legal freeing of slaves and serfs. A full half of the race, the women, are tempted into occupations and varied activities which were closed to their grandmothers or did not exist a generation or so ago. Formerly, according to both earthly and heavenly law, husbands were encouraged to think that they owned their wives and their children. "The Family" and "Marriage" have been a good many different kinds of things in the past and they promise to undergo new changes as time goes on. This will not be due to the prevailing of wickedness, as the clergy would have us believe, but to an altered situation.

The children too are involved. Modern psychologists think of a child as far older at six than was formerly believed. Bertrand Russell in his book on *Education and the Good Life* holds that "character" is pretty completely developed at that age. The effect of modern social and economic conditions on the views and relations of boys and girls is explained, on the basis of long and intimate experience with the actual facts in a large city, by Judge Lindsey, in his *Revolt of Modern Youth*.

The sixth and last "law" which Professor Cheyney mentions is the decrease of gratuitous cruelty and the widening of human sympathy and kindliness. With this I agree, but with many reservations. We do not publicly impale or eviscerate or burn or decapitate or break on the wheel the enemies of God, the king, and society, as formerly. And only when a holy war comes on do we blow them to pieces. On our breakfast table we find piled up appeals to help relieve the sufferings of the sick, destitute, and erring. Being prone to explain changes in human practices and moods by taking into account altering conditions, I suspect that the fact that we are so squeezed together nowadays makes it impossible for us

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to be so indifferent to our neighbour as once we were. This accounts for some new decencies and seeming understandings. Disease is now known to be transmissible and to come from an infected fellow creature rather than from either God or the devil. Black and white, Jew and Gentile, oriental and occidental have to snatch the same seats and hang to the same straps in the New York subways. This foments a sort of enforced brotherhood of unavoidable competition and interlocking misfortunes. This does not mean that I underrate the unmistakable increase in benevolence; I am only explaining that it now rests on a more solid foundation than that of mere exhortation to love our neighbor as ourselves. If "love" should be interpreted "understand" it would become a scientific ambition with most revolutionary consequences.

But there is certainly a very sour and ugly strain in men, women, and children which, given the right stimulus, will under many pious disguises, express itself in cruelty of word and deed. Even gentle souls will suddenly become acrid, and exhibit a ferocity which is a correlative of their successful repressions. Fear and jealousy and envy are in their hearts as in those of the more openly inhumane. Many of the most successful films have their scenes of torture, their voluptuousness of cruelty. "Sadism" is a rather new word for a class of very common and inveterate reactions of human beings.

Every day brings illustrations of it in the newspapers. We are, however, making progress through a fuller understanding of this horrid element in human nature.

IV

So far I have followed, in general, Professor Cheyney's lead, although he is not to be held responsible for my elaboration of his six points. To the six it seems to me one might add a good many more—so many more that I can only hint at them.

One of the most important of these is the trend toward secularization, or the reduction of human affairs to earthly standards. There are no longer many kings by the grace of God. The treaty of Vienna in the early part of the nineteenth century was concluded in the name of the Holy Trinity; that of Versailles, a hundred years later, invokes no celestial benediction upon its stupidities. Education has to a great extent escaped from the control of the churches; ecclesiastical courts, which before the French Revolution settled a wide range of cases, have largely disappeared. Legislative assemblies may still be opened with prayer, but rarer and rarer are the appeals made to the Bible by lawgivers. Our present crop of dictators may try to create a state religion in the place of the old supernaturalism, but even this is a change towards secularization and it is not likely to be permanent.

The belief in supernatural beings still prevails, and

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openly to question the existence of God is still unusual and shocking. But Satan and his hosts are becoming mere shadows of their former selves. Their malignant rôle as tempters, storm raisers, and disease producers is pretty much played out in our western world.

The so-called free thinkers of the eighteenth century held that a belief in a future life of rewards or punishments for the deeds done in the flesh was essential to maintain the morality of the multitude; otherwise men and women would cast off all restraint and obey the impulses of the moment. Whether confidence in the survival of our personalities beyond the grave is declining I do not know. It has been reënforced in recent years by what is known as "psychic" phenomena. At any rate much less is said about the terrible alternative between heaven and hell, and morality is gradually being shifted on to a new and, what seems to me, a firmer basis, namely that *it pays*, in this world as well as in the next, if such there be. But morality itself is assuming a different guise from that familiar to the moralists of past days.

Whether the growing knowledge of man's nature and origin and of the resources of the world in which he lives will ultimately destroy the old and spontaneous belief in supernatural beings it is impossible to say. The increasing possibilities of our earthly existence and the disturbance of long-established routine in thought and action conspire to give this mortal life an ever enlarging and absorbing interest. Nor is this interest necessarily "materialistic," as is sometimes hastily inferred by the "spiritual." It may bring with it quite as noble aspirations as any preached in the past.

The bringing together of all the peoples of the earth is a very new thing under the sun. The daily news is, with trivial exceptions, common to the whole globe. President Wilson could talk to the world at large with as much ease and more assurance than he could address the Senate. Since his day the radio has further facilitated the feat of "telling the world" whatever is on the mind of an eminent figure. All this suggests a unification of mankind impossible in the past which may take the form of unprecedented coöperation or of rivalries and struggles which will make earlier wars look like feeble forecasts of what is to come.

Were there space here I think that I could make out a fair case for the guess that the World War which began in 1914 may prove to be the last of its species, in spite of ominous evidence to the contrary right now.¹ We are at least gradually coming to see that "war" has become an old name for a new thing, as amply exemplified in the last great instance. The extension of conscription coerced the most gentle and unwarlike into the lines; noncombatants, however far from the scene of battle, were, as never before subject to sudden death and muti-

¹See below, pp. 295 ff.

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lation; the nations' whole economic systems suffered unprecedented derangement and imminent bankruptcy. And more impressive still is the assurance that all is ready to intensify these horrors should another general conflict occur. Consequently war never before appeared to so many as not only a crime, but what is much more important, a most atrocious farce.

To judge from the way in which witchcraft, slavery, and active religious persecution disappeared—all ancient and sanctified and seemingly *permanent* human institutions—the doom of war may possibly be near at hand. At any rate the forces making against war are far more potent than ever before. It may be that we shall need one more lesson. Perhaps if New York, London, Paris, Berlin, and Rome could be shattered by means now in hand and their peaceful inhabitants suffocated, it might bring the rest of mankind into a chastened frame of mind suitable to an honest reconsideration of the implications of war as now practised.

Man was originally an utterly improvident animal. He had no inclination to store up provisions like a squirrel. He was no more frugal than a horse. An empty maw was his chief incentive to activity. He spent a great part of his life wandering about in search of something to eat. His leisure was the lethargy following a good gorge. His only form of "investment" was bringing down a sufficiently large animal to outrun the appetites of him-

self and his hungry companions. Our modern industrial engineer is the modern representative and successor of a long line of inventors who have taught us frugality in some degree and made possible active leisure as over against savage apathy. Were the ingenuities of these inventors done away with, human life would be reduced once more to that of the racoon-saving his honor. Viewed in the light of man's history, our present system of industrial organization based upon an ever-enlarging mechanism of credit is one of the most astounding inventions. With all its defects it has done much to liberate mankind from the hazards of the past. As yet it is an experiment the results of which cannot be foreseen. It has produced socialism which may very well before long discredit it both in theory and practice. The lot of the overwhelming mass of mankind has always been miserable; our present industrial and financial system did not create poverty and over-work; it has somewhat alleviated them already, and may be utilized, with various modifications and changes of attitude, in their further reduction. If it fails, Russia has already shown what may be done with a quite different set of economic concepts and practices.

v

These historical memories must suffice, for there is not space for more. They seem to me to suggest an attitude

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toward general and individual betterment very different from what most of us have been brought up on. The fundamental fact is that almost all leaders of humanity still feel that the new should not only rest, as it inevitably must, on the old, but that it must be in unquestioned subjection to sanctified tradition. The International Eucharistic Congress in Chicago, a few years ago, was an instance of this. Modern methods of transportation and publicity were utilized to republish, amid gorgeous ancient pageantry and popular acclaim, one of the fundamental doctrines of the Medieval Church.

The world is, however, assuredly turning out to be a very different place from what it was conceived to be in the Middle Ages; human possibilities have expanded beyond belief, and man himself as well as his heaven and earth has little resemblance to the pictures of him which have been furnished by his moral guides. *Is not the moral overrating of the past our besetting danger?* As yet our emotions have not caught up with our present situation and information. We have the great task before us of gradually replacing archaic aspirations, abhorrences, tastes, and scruples by others which shall conform more closely to the actual facts as now understood and the actual conditions in which we live. Otherwise, our struggles toward the good life must perforce be feeble, hesitant, and ineffective, as indeed we find them to be.

CHAPTER V

THE CONQUEST OF CIVILIZATION

We are now about to take up the human drama at the threshold of what we used to call the "historic" period. But we have the knowledge today which enables us to approach the dawn of history more intelligently than could any previous generation. There was no sharp break between the prehistoric and the historic ages of man. The former was far longer than the latter and gradually drifted into it.

In order to understand the light which the discovery of the vast age of mankind casts on our present position, our relation to the past and our hopes for the future, let us borrow, with some modifications, an ingenious device for illustrating the new historical perspective. Let us imagine the whole history of mankind crowded into twelve hours, and that we are living at noon of the long human day. Let us, in the interest of moderation and convenient reckoning, assume that man has been upright and engaged in seeking out inventions for only two hundred and forty thousand years, which is probably less than one-fourth of the actual time man has

been on the planet. Each hour on our clock will then represent twenty thousand years, each minute three hundred and thirty-three and a third years. For over eleven and a half hours nothing was recorded. We know of no persons or events; we only infer that man was living on the earth, for we find his stone tools, bits of his pottery, and some of his pictures of mammoths and bison. Not until twenty minutes before twelve do the earliest vestiges of Egyptian and Babylonian civilization begin to appear. The Greek literature, philosophy, and science of which we have been accustomed to speak as "ancient," are not seven minutes old. At one minute before twelve Francis Bacon wrote his Advancement of Learning, and not a half-minute has elapsed since man first began to make the steam engine do his work for him. There is, I think, nothing delusive about this reduced scale of things. It is much easier for us to handle and speculate upon than the life-sized picture, which so transcends our experience that we cannot grasp it.

Two reflections are obvious: In the first place, those whom we call the ancients—Thales, Pythagoras, Socrates, Plato, Aristotle, Hipparchus, Lucretius—are really our contemporaries. However remote they may have seemed on Archbishop Usher's plan of the past, they now belong to our own age. We have no reason whatever to suppose that their minds were better or worse than ours, except in point of knowledge, which has been

accumulating since their day. In the second place, we are struck by the fact that man's progress was at first shockingly slow, well-nigh imperceptible for tens of thousands of years, but that it tends to increase in rapidity with an ever-accelerating tempo. Our forefathers, the drift men, may have satisfied themselves for a hundred thousand years with a single stone implement, the so-called coup de poing, or fist hatchet, used, as Sir John Lubbock surmised, for as many purposes as a boy's jackknife. In time they learned to make scrapers, borers, arrow-heads, harpoon points, and rude needles of flint and bone. But it was scarcely more than half an hour before twelve by our clock that they can be shown to have invented pottery and become the possessors of herds. The use of bronze and iron is much more recent, and the men of the bronze age still retained a pious devotion to the venerable stone hatchet, which the priests appear to have continued to use to slay their victims, long after the metals began to be used.

II

The Egyptians were the first people, so far as we know, who invented a highly artificial method of writing, about five or six thousand years ago, and began to devise new arts beyond those of their barbarous predecessors. They developed painting and architecture, navigation, and various ingenious industries; they worked in

glass and enamels and began the use of copper, and so introduced metal into human affairs. But in spite of their extraordinary advance in practical, matter-of-fact knowledge they remained very primitive in their beliefs. The same may be said of the peoples of Mesopotamia and of the western Asiatic nations in general—just as in our own day the practical arts have got a long start compared with the revision of beliefs in regard to man and the gods. The peculiar opinions of the Egyptians do not enter directly into our intellectual heritage, but some of the fundamental religious ideas which developed in western Asia have, through the veneration for the Hebrew Scriptures, become part and parcel of our ways of thinking.

To the Greeks, however, we are intellectually under heavy obligation. The literature of the Greeks, in such fragments as escaped destruction, was destined, along with the Hebrew Scriptures, to exercise an incalculable influence in the formation of our modern civilized minds. These two dominating literary heritages originated about the same time—about seven minutes ago—viewed in the new perspective of our race's history. Previous to the Greek civilization books had played no great part in the development, dissemination, and transmission of culture from generation to generation. Now they were to become a cardinal force in advancing and retarding the mind's expansion.

It required about a thousand years for the Greek

shepherds from the pastures of the Danube to assimilate the culture of the highly civilized regions in which they first appeared as barbarian destroyers. They accepted the industrial arts of the eastern Mediterranean, adopted the Phœnician alphabet, and emulated the Phœnician merchant. By the seventh century before our era they had towns, colonies, and commerce, with much stimulating running hither and thither. We get our first traces of new intellectual enterprise in the Ionian cities, especially Miletus, and in the Italian colonies of the Greeks. Only later did Athens become the unrivaled center in a marvelous outflowering of the human intelligence.

III

It is a delicate task to summarize what we owe to the Greeks. Leaving aside their supreme achievements in literature and art, we can consider only very briefly the general scope and nature of their thinking as it relates most closely to our theme.¹

The chief strength of the Greeks lay in their freedom from hampering intellectual tradition. They had no venerated classics, no holy books, no dead languages to master, no authorities to check their free speculation. As Lord Bacon reminds us, they had no antiquity of knowledge and no knowledge of antiquity. A modern classicist

¹For a summary of non-intellectual aspects of the Human Comedy in early civilization and the middle ages, see below, pp. 197 ff.; 235 ff.

would have been a forlorn outlander in ancient Athens, with no books in a forgotten tongue, no obsolete inflexions to impose upon reluctant youth. He would have had to use the everyday speech of the sandal-maker and the fuller.

For a long time no technical words were invented to give aloofness and seeming precision to philosophic and scientific discussion. Aristotle was the first to use words incomprehensible to the average citizen. It was in these conditions that the possibilities of human criticism first showed themselves. The primitive notions of man, of the gods, and of the workings of natural forces began to be overhauled on an entirely new scale. Intelligence developed rapidly as exceptionally bold individuals came to have their suspicions of simple, spontaneous, and ancient ways of looking at things. Ultimately there came men who professed to doubt everything.

As Abélard long after put it, "By doubting we come to question, and by seeking we may come upon the truth." But man is by nature credulous. He is victimized by first impressions, from which he can only escape with great difficulty. He resents criticism of accepted and familiar ideas as he resents any unwelcome disturbance of routine. Such criticism is against nature, for it conflicts with the smooth workings of our more primitive minds, those of the child and the savage.

It should not be forgotten that the Greek people were

no exception in this matter. Anaxagoras and Aristotle felt it prudent to leave Athens, thinking as they did; Euripides was an object of abhorrence to the conservative of his day, and Socrates was actually executed for his godless teachings. The Greek thinkers furnish the first instance of intellectual freedom, of the "self-detachment and self-abnegating vigor of criticism" which is most touchingly illustrated in the honest "know-nothingism" of Socrates. They discovered scepticism in the higher and proper significance of the word, and this was their supreme contribution to human thought.

One of the finest examples of early Greek scepticism was the discovery of Xenophanes that man created the gods in his own image. He looked about him, observed the current conceptions of the gods, compared those of different peoples, and reached the conclusion that the way in which a tribe pictured its gods was not the outcome of any knowledge of how they really looked and whether they had black eyes or blue, but was a reflection of the familiarly human. If the lions had gods they would have the shape of their worshipers.

No more fundamentally shocking revelation was ever made than this, for it shook the very foundations of religious belief. The home life on Olympus as described in Homer was too scandalous to escape the attention of the thoughtful, and no later Christian could have denounced the demoralizing influence of the current reli-

gious beliefs in hotter indignation than did Plato. To judge from the reflection of Greek thought which we find in Lucretius and Cicero, none of the primitive religious beliefs escaped mordant criticism.

The second great discovery of the Greek thinkers was metaphysics. They did not have the name, which originated long after in quite an absurd fashion,² but they reveled in the thing. Nowadays metaphysics is revered by some as our noblest effort to reach the highest truth, and scorned by others as the silliest of wild-goose chases. The Greeks found that the mind could carry on an absorbing game with itself. We all engage in reveries and fantasies of a homely, everyday type, concerned with our desires or resentments, but the fantasy of the metaphysician busies itself with conceptions, abstractions, distinctions, hypotheses, postulates, and logical inferences. Having made certain postulates or hypotheses, he finds new conclusions, which he follows in a seemingly convincing manner. This gives him the delightful emotion of pursuing Truth, something as the simple man pursues a maiden. Only Truth is more elusive than the maiden and may continue to beckon her follower for

^aWhen in the time of Cicero the long-hidden works of Aristotle were recovered and put into the hands of Andronicus of Rhodes to edit, he found certain fragments of highly abstruse speculation which he did not know what to do with. So he called them "addenda to the Physics"—*Ta meta ta physica*. These fragments, under the caption "Metaphysica," became the most revered of Aristotle's productions, his "First Philosophy" as the Scholastics were wont to call it.

long years, no matter how gray and doddering he may become.

Let me give two examples of metaphysical reasoning.³ We have an idea of an omnipotent, all-good, and perfect being. We are incapable, knowing as we do only imperfect things, of framing such an idea for ourselves, so it must have been given us by the being himself. And perfection must include existence, so God must exist. This was good enough for Anselm and for Descartes, who went on to build a whole closely concatenated philosophical system on this foundation. To them the logic seemed irrefragable; to the modern student of comparative religion, even to Kant, himself a metaphysician, there was nothing whatsoever in it but an illustration of the native operations of a mind that makes a wholly gratuitous hypothesis and is victimized by an orderly series of spontaneous associations.

A second example of metaphysics may be found in the doctrines of the Eleatic philosophers, who early appeared in the Greek colonies on the coast of Italy, and thought hard about space and motion. Empty space seemed as good as nothing, and, as nothing could not be

^a John Dewey deduces metaphysics from man's original reverie and then shows how in time it became a solemn form of rationalizing current habits and standards. *Reconstruction in Philosophy*, lectures i-ii. It is certainly surprising how few philosophical writers have ever reached other than perfectly commonplace conclusions in regard to practical "morality."

said to exist, space must be an illusion; and as motion implied space in which to take place, there could be no motion. So all things were really perfectly compact and at rest, and all our impressions of change were the illusions of the thoughtless and the simple-minded. Since one of the chief satisfactions of the metaphysicians is to get away from the welter of our mutable world into a realm of assurance, this doctrine exercised a great fascination over many minds. The Eleatic conviction of unchanging stability received a new form in Plato's doctrine of eternal "ideas," and later developed into the comforting conception of the "Absolute," in which logical and world-weary souls have sought refuge from the times of Plotinus to those of Josiah Royce.

But there was one group of Greek thinkers whose general notions of natural operations correspond in a striking manner to the conclusions of the most recent science. These were the Epicureans. Democritus was in no way a modern experimental scientist, but he met the Eleatic metaphysics with another set of speculative considerations which happened to be nearer what is now regarded as the truth than theirs. He rejected the Eleatic decisions against the reality of space and motion on the ground that, since motion obviously took place, the void must be a reality, even if the metaphysician could not conceive it. He hit upon the notion that all things were

composed of minute, indestructible particles (or atoms) of fixed kinds. Given motion and sufficient time, these might by fortuitous concourse make all possible combinations. And it was one of these combinations which we call the world as we find it. For the atoms of various shapes were inherently capable of making up all material things, even the soul of man and the gods themselves. There was no permanence anywhere; all was no more than the shifting accidental and fleeting combinations of the permanent atoms of which the cosmos was composed. This doctrine was accepted by the noble Epicurus and his school and is delivered to us in the immortal poem of Lucretius *On the Nature of Things*.

The Epicureans believed the gods to exist, perhaps, because, like Anselm and Descartes, they thought we had an innate idea of them. But the divine beings led a life of elegant ease and took no account of man; neither his supplications, nor his sweet-smelling sacrifices, nor his blasphemies, ever disturbed their calm. Moreover, the human soul was dissipated at death. So the Epicureans flattered themselves that they had delivered man from his two chief apprehensions, the fear of the gods and the fear of death. For, as Lucretius says, he who understands the real nature of things will see that both are the illusions of ignorance. Thus one school of Greek thinkers attained to a complete rejection of religious beliefs in the name of natural science.

IV

In Plato we have at once the scepticism and the metaphysics of his contemporaries. He has had his followers down through the ages, some of whom carried his scepticism to its utmost bounds, while others availed themselves of his metaphysics to rear a system of arrogant mystical dogmatism. He put his speculations in the form of dialogues-ostensible discussions in the marketplace or the houses of philosophic Athenians. The Greek word for logic is dialectic, which really means "discussion," argumentation in the interest of fuller analysis, with the hope of more critical conclusions. The dialogues are the drama of his day, employed in Plato's magical hand as a vehicle of discursive reason. Of late we have in Ibsen, Shaw, Brieux, and Galsworthy the old expedient applied to the consideration of social perplexities and contradictions. The dialogue is indecisive in its outcome. It does not lend itself to dogmatic conclusions and systematic presentation, but exposes the intricacy of all important questions and the inevitable conflict of views which may seem altogether irreconcilable. We much need to encourage and elaborate opportunities for profitable discussion today. We should revert to the dialectic of the Athenian agora and make it a chosen instrument for clarifying, coördinating, and directing our coöperative thinking.

Plato's indecision and urbane fair-mindedness are called irony. Now irony is seriousness without solemnity. It assumes that man is a serio-comic animal, and that no treatment of his affairs can be appropriate which gives him a consistency and dignity which he does not possess. He is always a child and a savage. He is the victim of conflicting desires and hidden yearnings. He may talk like a sentimental idealist and act like a brute. The same person will devote anxious years to the invention of high explosives and then give his fortune to the promotion of peace. We devise the most exquisite machinery for blowing our neighbors to pieces and then display our highest skill and organization in trying to patch together such as offer hope of being mended. Our nature forbids us to make a definite choice between the machine-gun and the Red Cross nurse. So we use the one to keep the other busy. Human thought and conduct can only be treated broadly and truly in a mood of tolerant irony. It belies the logical precision of the long-faced humorless writer on politics and ethics, whose works rarely deal with man at all, but are a stupid form of metaphysics.

Plato made terms with the welter of things, but sought relief in the conception of supernal models, eternal in the heavens, after which all things were imperfectly fashioned. He confessed that he could not bear to accept a world which was like a leaky pot or a man running at the nose. In short, he ascribed the highest form of

existence to ideals and abstractions. This was a new and sophisticated republication of savage animism. It invited lesser minds than his to indulge in all sorts of noble vagueness and impertinent jargon which continue to curse our popular discussions of human affairs. He consecrated one of the chief foibles of the human mind and elevated it to a religion.

Ever since his time men have discussed the import of names. Are there such things as love, friendship, and honor, or are there only lovely things, friendly emotions in this individual and that, deeds which we may, according to our standards, pronounce honorable or dishonorable? If you believe in beauty, truth, and love *as such* you are a Platonist. If you believe that there are only individual instances and illustrations of various classified emotions and desires and acts, and that abstractions are only the inevitable categories of thought, you would in the Middle Ages have been called a "nominalist."

This matter merits a long discussion, but one can test any book or newspaper editorial at his leisure and see whether the writer puts you off with abstractions—Bolshevism, public welfare, liberty, national honor, religion, morality, good taste, rights of man, science, reason, error —or, on the other hand, casts some light on actual human complications. I do not mean, of course, that we can get along without the use of abstract and general terms in our thinking and speaking, but we should be on our

constant guard against viewing them as forces and attributing to them the vigor of personality. Animism is, as already explained, a pitfall which is always yawning before us and into which we are sure to plunge unless we are ever watchful. Platonism is its most amiable and complete disguise.

v

Previous to Aristotle, Greek thought had been wonderfully free and elastic. It had not settled into compartments or assumed an educational form which would secure its unrevised transmission from teacher to student. It was not gathered together in systematic treatises. Aristotle combined the supreme powers of an original and creative thinker with the impulses of a text-book writer. He loved order and classification. He supplied manuals of Ethics, Politics, Logic, Psychology, Physics, Metaphysics, Economics, Poetics, Zoölogy, Meteorology, Constitutional Law, and God only knows what not, for we do not have by any means all the things he wrote. And he was equally interested, and perhaps equally capable, in all the widely scattered fields in which he labored. And some of his manuals were so overwhelming in the conclusiveness of their reasoning, so all-embracing in their scope, that the medieval universities may be forgiven for having made them the sole basis of a liberal education and for imposing fines on those who ventured

to differ from "The Philosopher." He seemed to know everything that could be known, and to have ordered all earthly knowledge in an inspired codification which would stand the professors in good stead down to the day of judgment.

Aristotle combined an essentially metaphysical taste with a preternatural power of observation in dealing with the workings of nature. In spite of his inevitable mistakes, which became the curse of later docile generations, no other thinker of whom we have record can really compare with him in the distinction and variety of his achievements. It is not his fault that posterity used his works to hamper further progress and clarification. He is the father of book knowledge, and the grandfather of the commentator.

After two or three hundred years of talking in the market-place, and of philosophic discussions prolonged until morning, such of the Greeks as were predisposed to speculation had thought all the thoughts and uttered all the criticisms of commonly accepted beliefs and of one another that could by any possibility occur to those who had little inclination to fare forth and extend their knowledge of the so-called realities of nature by painful and specialized research and examination. This is to me the chief reason why, except for some advances in mathematics, astronomy, geography, and the refinements of scholarship, the glorious period of the Greek mind is commonly and rightfully assumed to have come to an end about the time of Aristotle's death. Why did the Greeks not go on, as modern scientists have gone on, with vistas of the unachieved still ahead of them?

In the first place, Greek civilization was founded on slavery and a fixed condition of the industrial arts. The philosopher and scholar was estopped from fumbling with those everyday processes that were associated with the mean life of the slave and servant. Consequently there was no one to devise the practical apparatus by which alone profound and ever-increasing knowledge of natural operations is possible. The mechanical inventiveness of the Greeks was slight, and hence they never came upon the lens; they had no microscope to reveal the minute, no telescope to attract the remote; they never devised a mechanical timepiece, a thermometer, or a barometer, to say nothing of cameras and spectroscopes. Archimedes, it is reported, disdained to make any record of his ingenious devices, for they were unworthy of the noble profession of a philosopher. Such inventions as were made were usually either toys or of a heavy practical character. So the next great step forward in the extension of the human mind awaited the disappearance of slavery and the slowly dawning suspicion, and final repudiation, of the older metaphysics, which first became marked some three hundred years ago.

vı

The Romans were a practically minded people with a bucolic background who had little of the Greek originality in things intellectual. The Romans took over for their own much of the Greek science, philosophy, literature, and art. In such fields they were imitators and assimilators, and Cicero represented this trend at its best. But in the realms of military strategy and imperial administration the Romans went far beyond anything the Greeks achieved. They built up the first great worldstate, far surpassing the ancient Assyrian and Persian Empires, both of which were, indeed, along with the Egyptians, brought within the confines of the Roman domain.

The Roman Empire, which embraced southern and western Europe, western Asia, and even the northern portion of Africa, included the most diverse peoples and races. Egyptians, Arabs, Jews, Greeks, Germans, Gauls, Britons, Iberians—all alike were under the sovereign rule of Rome. A single great state embraced nomad shepherds, who spread their tents on the borders of Sahara; mountaineers in the fastnesses of Wales; and the citizens of Athens, Alexandria, and Rome, heirs to all the luxury and learning of the ages. Whether one lived in York or Jerusalem, Carthage or Vienna, he paid his taxes to the same treasury, he was tried by the same law, and he looked to the same armies for protection.

At first it seems incredible that this huge empire, which included African and Asiatic peoples as well as the most various races of Europe in all stages of civilization, could have held together for five centuries instead of falling to pieces (as might have been expected) long before the barbarians came in sufficient strength to establish their own kingdoms in its midst. However, it is easy to understand the permanence of the Empire when we consider the bonds of union which held the state together. These were (1) the government, so ingeniously organized that it penetrated to every part of the realm and allowed little to escape it; (2) the worship of the Emperor as the incarnation of the government; (3) the Roman law in force everywhere; (4) the admirable roads and the uniform system of coinage which encouraged intercommunication; and (5) the teachers maintained by the government, for through them the same ideas and culture were carried to even the most distant parts of the Empire.

Let us first glance at the government and the Emperor. His decrees were dispatched throughout the length and breadth of the Roman dominions; whatsoever pleased him became law, according to the well-known principle of the Roman constitution. While the cities were per-

mitted some freedom in the regulation of the purely local affairs, the Emperor and his innumerable and marvelously organized officials kept an eye upon even the humblest citizen. The Roman government, besides maintaining order, administering justice, and defending the boundaries, assumed many other responsibilities. It watched the grain dealers, butchers, and bakers; saw that they properly supplied the public and never deserted their occupations. In some cases it forced the son to follow the profession of his father. If it could have had its way, it would have had everyone belong to a definite class of society, and his children after him. It kept the unruly poorer classes quiet in the towns by furnishing them with bread and sometimes with wine, meat, and clothes. It provided amusement for them by expensive entertainments, such as races and gladiatorial combats. In a word, the Roman government was not only so organized that it penetrated to the utmost confines of its territory, but it attempted to guard and regulate almost every interest in life.

Everyone was required to join in the worship of the Emperor, because he stood for the majesty of the Roman dominion. The inhabitants of each province might revere their particular gods, undisturbed by the government, but all were obliged as good citizens to join in the official sacrifices to the deified head of the state. The early Christians were persecuted not chiefly because their religion was different from that of their fellows, but because they refused to offer homage to the image of the Emperor and openly prophesied the downfall of the Roman state. Their religion was incompatible with what was then deemed good citizenship, inasmuch as it forbade them to express the required veneration of the government.

As there was one government, so there was one law for all the civilized world. Local differences were not considered; the same principles of reason, justice, and humanity were believed to hold whether the Roman citizen lived upon the Euphrates or the Thames. The law of the Roman Empire is its chief legacy to posterity. Its provisions are still in force in many of the states of Europe today, and it is one of the subjects of study in our American universities. It exhibited a humanity unknown to the earlier legal codes. The wife, the mother, and the infant were protected from the arbitrary power of the head of the house, who, in earlier centuries, had been privileged to treat the members of his family as slaves. It held that it was better that a guilty person should escape than that an innocent person should be condemned. It conceived humanity not as a group of nations and tribes, each with its peculiar institutions and legal customs, but as one people included in one great

THE CONQUEST OF CIVILIZATION empire and subject to a single system of law based upon reason and equity.

Magnificent roads were constructed which enabled the messengers of the government and its armies to reach every part of the Empire with great speed for those days. These highways made commerce easy and encouraged merchants and travelers to visit the most distant portions of the realm. Everywhere they found the same coins and the same system of weights and measures. Colonies were sent out to the confines of the Empire; and the remains of the great public buildings, of theaters and bridges, of sumptuous villas and baths at places like Treves, Cologne, Bath, and Salzburg, indicate how thoroughly the influence and civilization of Rome penetrated to the utmost parts of the territory subject to her rule.

The government encouraged education by supporting at least three teachers in every town of any considerable importance. They taught rhetoric and oratory and explained the works of great writers. The Romans, who possessed no marked literary or artistic ability, had adopted the culture of the Greeks. This was spread abroad by the government teachers, so that an educated man was pretty sure to find, even in the outlying parts of the great Empire, other educated men with much the same interests and ideas as his own. Everywhere men felt themselves to be not mere natives of this or that land, but citizens of the world.

During the four centuries from the first emperor, Augustus, to the barbarian invasions we hear of no attempt on the part of its subjects to overthrow the Empire or to secede from it. The Roman state, it was universally believed, was to endure forever. Had a rebellious nation succeeded in throwing off the rule of the Emperor and establishing its independence, it would only have found itself outside the civilized world.

Just why the Roman government, once so powerful and so universally respected, finally became unable longer to defend its borders and gave way before the scattered attacks of the German peoples, who never combined in any general alliance against it, is a very difficult question to answer satisfactorily. The inhabitants of the Empire appear gradually to have lost their energy and self-reliance and to have become less and less prosperous. This may be explained partially, at least, by the following considerations: (1) the terrible system of taxation, which discouraged and not infrequently ruined the members of the wealthier classes; (2) the existence of slavery, which served to discredit honest labor and demoralized the free workingmen; (3) the steady deterioration of the land, which was not properly fertilized, and the consequent decrease of population; (4) the infiltration of barbarians, who prepared the way for the conquest of the western portion of the Empire by their fellow barbarians.

VII

The melancholy decline of Hellenism in the later Roman Empire was accompanied by the development of new types of intellectual enthusiasm based upon entirely different presuppositions in regard to man's origin and chief business in life. One of the great modern historical discoveries is that what we term "medieval" thought was to all intents and purposes completely elaborated in the later Roman Empire, before the Germans disrupted the western portions of the vast commonwealth organized by Augustus. An emotional revolution had begun as early as Plutarch and had gradually served to denature the traditions of the intellectual life as they had come down from Athens. Reason became an object of suspicion; its impotence seemed to have been clearly proved; the intellectual class sought solace not so much in the restraints of Stoicism as in the abandon of Neoplatonism, and the vagaries of theurgy and of Oriental mysticism. The clarity and moderation which we associate with Hellenism gave place to the deprecation of reason and a corresponding confidence in the supernatural. Plotinus maintained that only the meaner things of life come within the scope of reason; that the highest truth is supernatural; that it is through intuition rather than reason that we may hope to approach our highest aspirations.

Adolph Harnack once well said that Neoplatonism,

however lofty and inspiring in some of its aspects, implied nothing less than intellectual bankruptcy: "The contempt for reason and science (for these are contemned when relegated to a second place) finally leads to barbarism, because it results in crass superstition, and is exposed to all manner of imposture. And, as a matter of fact, barbarism succeeded the flourishing period of Neoplatonism. . . . The masses grew up in superstition, and the Christian Church, which entered on the inheritance of Neoplatonism, was compelled to reckon with this and come to terms with it. Just when the bankruptcy of the ancient civilization and its lapse into barbarism could not have failed to reveal themselves, a kindly destiny placed on the stage of European history certain barbarian nations, for whom the work of a thousand years had as yet no existence. Thus the fact is obscured, though it does not escape the eye of one who looks below the surface, that the ancient world must necessarily have degenerated into barbarism of its own accord, because of its renunciation of this world. There was no longer any desire either to enjoy it, to master it, or to know it as it really is. A new world had been disclosed for which everything in this world was to be given up, and men were ready to sacrifice insight and understanding, in order to possess that other world with certainty. In the light which radiated from the world to come, that which in this world appeared absurd became wisdom, and wisdom became folly."

CHAPTER VI

THE MEDIEVAL OUTLOOK

 \mathbf{I}^{N} The formation of what we may call our historical mind-namely, that modification of our animal and primitive outlook which has been produced by men of exceptional intellectual venturesomeness-the Greeks played a great part. We have seen how the Greek thinkers introduced for the first time highly subtle and critical ways of scrutinizing old beliefs, and how they disabused their minds of many an ancient and naïve mistake. But our current ways of thinking are not derived directly from the Greeks; we are separated from them by the Roman Empire and the Middle Ages. When we think of Athens we think of the Parthenon and its frieze, of Sophocles and Euripides, of Socrates and Plato and Aristotle, or urbanity and clarity and moderation in all things. When we think of the Middle Ages we find ourselves in a world of monks, martyrs, and miracles, of popes and emperors, of knights and ladies; we remember Gregory the Great, Abélard, and Thomas Aquinas-and very little do these reminiscences have in common with those of Hellas.

It was indeed a different world, with quite different

fundamental presuppositions. Marvellous as were the achievements of the Greeks in art and literature, and ingenious as they were in new and varied combinations of ideas, they paid too little attention to the common things of the world to devise the necessary means of penetrating its mysteries. They failed to come upon the lynx-eyed lens, or other instruments of modern investigation, and thus never gained a godlike vision of the remote and the minute. Their critical thought was consequently not grounded in experimental or applied science, and without that the western world was unable to advance or even long maintain their high standards of criticism.

After the Hellenes were absorbed into the vast Roman Empire critical thought and creative intelligence-rare and precarious things at best-began to decline, at first slowly and then with fatal rapidity and completeness. Moreover, new and highly uncritical beliefs and modes of thought became popular. They came from the Near East-Mesopotamia, Syria, Egypt, and Asia Minor-and largely supplanted the critical traditions of the great schools of Greek philosophy. The Stoic and Epicurean dogmas had lost their freshness. The Greek thinkers had all agreed in looking for salvation through intelligence and knowledge. But eloquent leaders arose to reveal a new salvation, and over the portal of truth they erased the word "Reason" and wrote "Faith" in its stead; and the people listened gladly to the new prophets, for it was necessary only *to believe* to be saved, and believing is far easier than thinking.

It was religious and mystical thought which, in contrast to the secular philosophy of the Greeks and the scientific thought of our own day, dominated the intellectual life of the Middle Ages.

Before considering this new phase through which the western human mind was to pass it is necessary to guard against a common misapprehension in the use of the term "Middle Ages." Our historical text-books usually include in that period the happenings between the dissolution of the Roman Empire and the voyages of Columbus or the opening of the Protestant revolt. To the student of intellectual history this is unfortunate, for the simple reason that almost all the ideas, and even institutions, of the Middle Ages, such as the Church and monasticism and organized religious intolerance, really originated in the late Roman Empire. Moreover, the intellectual revolution which has ushered in the thought of our day did not get well under way until the seventeenth century. So one may say that medieval thought began long before the accepted beginning of the Middle Ages, and persisted a century or so after they are ordinarily esteemed to have come to an end. We have to continue to employ the old expression for convenience sake, but from the standpoint of the history of the European mind three

periods should be distinguished, lying between ancient Greek thought as it was flourishing in Athens, Alexandria, Rhodes, Rome, and elsewhere at the opening of the Christian era, and the birth of modern science some sixteen hundred years later.

The first of these is the period of the Christian Fathers, culminating in the authoritative writings of Augustine, who died in 430. By this time a great part of the critical Greek books had disappeared in western Europe. As for pagan writers, one has difficulty in thinking of a single name (except that of Lucian) later than Juvenal, who had died nearly three hundred years before Augustine. Worldly knowledge was reduced to pitiful compendiums on which the medieval students were later to place great reliance. Scientific, literary, and historical information was scarcely to be had. The western world, so far as it thought at all, devoted its attention to religion and all manner of mystical ideas, old and new. As Harnack has so well said, in the passage just cited, the world was already intellectually bankrupt before the German invasions and their accompanying disorders plunged it into still deeper ignorance and mental obscurity.

The second, or "Dark Age," lasted with only slight improvement from Augustine to Abélard, about seven hundred years. The prosperous *villas* disappeared; towns vanished or shriveled up; libraries were burned or rotted away from neglect; schools were closed, to be reopened

THE MEDIEVAL OUTLOOK

later here and there, after Charlemagne's educational edict, in an especially enterprising monastery or by some exceptional bishop who did not spend his whole time in fighting and shedding blood.

From about the year 1100 conditions began to be more and more favorable to the revival of intellectual ambition, a recovery of forgotten knowledge, and a gradual accumulation of new information and inventions unknown to the Greeks, or indeed to any previous civilization. The main presuppositions of this third period of the later Middle Ages go back, however, to the Roman Empire. They had been formulated by the Church Fathers, transmitted through the Dark Age, and were now elaborated by the professors in the newly established universities under the influence of Aristotle's recovered works and built up into a majestic intellectual structure known as Scholasticism. On these medieval university professors-the schoolmen-Lord Bacon long ago pronounced a judgment that may well stand today. "Having sharp and strong wits, and abundance of leisure, and small variety of reading, but their wits being shut up in the cells of a few authors (chiefly Aristotle, their dictator), as their persons were shut up in the cells of monasteries and colleges, and knowing little history, either of nature or time, [they] did out of no great quantity of matter and infinite agitation of wit spin out unto us those laborious webs of learning which are extant in their books."

Our civilization and the human mind, critical and uncritical, as we now find it in our western world, is a direct and uninterrupted outgrowth of the civilization and thought of the later Middle Ages. Very gradually only did peculiarly free and audacious individual thinkers escape from this or that medieval belief, until in our own day some few have come to reject practically all the presuppositions on which the Scholastic system was reared. But the great mass of Christian believers, whether Catholic or Protestant, still professedly or implicity adhere to the assumptions of the Middle Ages, at least in all matters in which religious or moral sanctions are concerned. It is true that outside the Catholic clergy the term "medieval" is often used in a sense of disparagement, but that should not blind us to the fact that medieval presumptions, whether for better or worse, are still common. A few of the most fundamental of these presuppositions especially germane to our theme may be pointed out here.

II

The Greeks and Romans had various theories of the origin of things, all vague and admittedly conjectural. But the Christians, relying upon the inspired account in the Bible, built their theories on information which they believed had been vouchsafed to them by God Himself. Their whole conception of human history was based upon a far more fundamental and thorough supernaturalism than we find among the Greeks and Romans. The pagan philosophers reckoned with the gods, to be sure, but they never assumed that man's earthly life should turn entirely on what was to happen after death. This was in theory the sole preoccupation of the medieval Christian. Life here below was but a brief, if decisive, preliminary to the real life to come.

The medieval Christian was essentially more polytheistic than his pagan predecessors, for he pictured hierarchies of good and evil spirits who were ever aiding him to reach heaven or seducing him into the paths of sin and error. Miracles were of common occurrence and might be attributed to either God or the Devil; the direct intervention of both good and evil spirits played a conspicuous part in the explanation of daily acts and motives.

As a distinguished Church historian has said, the God of the Middle Ages was a God of arbitrariness--the more arbitrary the more Godlike. By frequent interferences with the regular course of events he made his existence clear, reassured his children of his continued solicitude, and frustrated the plots of the Evil One. Not until the eighteenth century did any considerable number of thinkers revolt against this conception of the Deity and

come to worship a God of orderliness who abode by his own laws.

The medieval thinkers all accepted without question what Santayana has strikingly described as the "Christian Epic." This included the general historical conceptions of how man came about, and how, in view of his origin and his past, he should conduct his life. The universe had come into being in less than a week, and man had originally been created in a state of perfection along with all other things—sun, moon, and stars, plants and animals. After a time the first human pair had yielded to temptation, transgressed God's commands, and been driven from the lovely garden in which he had placed them. So sin came into the world, and the offspring of the guilty pair were thereby contaminated and defiled from the womb.

In time the wickedness became such on the newly created earth that God resolved to blot out mankind, excepting only Noah's family, which was spared to repeople the earth after the Flood; but the unity of language that man had formerly possessed was lost. At the appointed time, preceded by many prophetic visions among the chosen people, God sent his Son to live the life of men on earth and become their Saviour by submitting to death. Thereafter, with the spread of the gospel, the struggle between the kingdom of God and that of the devil became the supreme conflict of history. It

was to culminate in the Last Judgment, when the final separation of good and evil should take place, and the blessed should ascend into the heavens to dwell with God forever, while the wicked sank to hell to writhe in endless torment.

This general account of man, his origin and fate, embraced in the Christian Epic, was notable for its precision, its divine authenticity, and the obstacles which its authority consequently presented to any revision in the light of increasing knowledge. The fundamental truths in regard to man were assumed to be established once and for all. The Greek thinkers had had little in the way of authority on which to build, and no inconsiderable number of them frankly confessed that they did not believe that such a thing could exist for the thoroughly sophisticated intelligence. But medieval philosophy and science were grounded wholly in authority. The medieval schoolmen turned aside from the hard path of scepticism, long searchings, and investigation of actual phenomena, and confidently believed that they could find truth by the easy acceptance of revelation and the elaboration of unquestioned dogmas.

This reliance on authority is a fundamental primitive trait. We have inherited it not only from our medieval forefathers, but, like them and through them, from long generations of prehistoric men. We all have a natural tendency to rely upon established beliefs and fixed institutions. This is an expression of our spontaneous confidence in everything that comes to us in an unquestioned form. As children we are subject to authority and cannot escape the control of existing opinion. We unconsciously absorb our ideas and views from the group in which we happen to live. What we see about us, what we are told, and what we read, must perforce be received at its face value so long as there are no conflicts to arouse scepticism.

During the Middle Ages reverence for authority, and for that particular form of authority which we may call the tyranny of the past, was dominant, but probably not more so than it had been in other societies and agesin ancient Egypt, in China and India. Of the great sources of medieval authority, the Bible and the Church Fathers, the Roman and Church law, and the encyclopedic writings of Aristotle, none continues nowadays to hold us in its old grip. Even the Bible, although nominally unquestioned among Roman Catholics and all the more orthodox Protestant sects, is rarely appealed to, as of old, in parliamentary debate or in discussions of social and economic questions. It is still a religious authority, but it no longer forms the basis of secular decisions.

The findings of modern science have shaken the hold of the sources of medieval authority, but they have done little as yet to loosen our inveterate habit of relying on the more insidious authority of current practice and

belief. We still assume that received dogmas represent the secure conclusions of mankind, and that current institutions represent the approved results of much experiment in the past, which it would be worse than futile to repeat. One solemn remembrancer will cite as a warning the discreditable experience of the Greek cities in democracy; another, how the decline of "morality" and the disintegration of the family heralded the fall of Rome; another, the constant menace of mob rule as exemplified in the Reign of Terror.

But to the student of history these alleged illustrations have little bearing on present conditions. He is struck, moreover, with the ease with which ancient misapprehensions are transmitted from generation to generation and with the difficulty of launching a newer and clearer and truer idea of anything. Bacon warns us that the multitude, "or the wisest for the multitude's sake," is in reality "ready to give passage rather to that which is popular and superficial than to that which is substantial and profound; for the truth is that time seemeth to be of the nature of a river or stream, which carrieth down to us that which is light and blown up, and sinketh and drowneth that which is weighty and solid."

It is very painful to most minds to admit that the past does not furnish us with reliable, permanent standards of conduct and of public policy. We resent the imputation that things are not going, on the whole, pretty well,

and we find excuses for turning our backs on disconcerting and puzzling facts. We are full of respectable fears and a general timidity in the face of conditions which we vaguely feel are escaping control in spite of our best efforts to prevent any thoroughgoing readjustment. We instinctively tried to show that Mr. Keynes must surely have been wrong about the Treaty of Versailles; that Sir Philip Gibbs must have been perversely exaggerating the horrors of modern war; that Mr. Hobson certainly viewed the industrial crisis with unjustifiable pessimism; that "big business" cannot be that socially perverse and incredibly inexpedient thing Mr. Veblen showed it to be; and that Mr. Roosevelt must have exaggerated in his strictures against the "money-changers" in our temple.

Yet, even if we could assume that traditional opinion is a fairly clear and reliable reflection of hard-earned experience, surely it should have less weight in our day and generation than in the past. For changes have overtaken mankind which have fundamentally altered the conditions in which we live, and are also revolutionizing the relations between individuals and classes and nations. Moreover, we must remember that knowledge has widened and deepened, so that, could any of us really catch up with the information of our own time, he would have little temptation to indulge the medieval habit of appealing to the authority of the past.

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The Christian Epic did not have to rely for its perpetuation on either its intellectual plausibility or its traditional authority. During the Middle Ages there developed a vast and powerful religious state, the medieval Church, the real successor, as Hobbes pointed out, to the Roman Empire; and the Church with all its resources, including its control over "the secular arm" of kings and princes, was ready to defend the Christian beliefs against question and revision. To doubt the teachings of the Church was the supreme crime; it was treason against God himself, in comparison with which—to judge from medieval experts on heresy—murder was a minor offense.

We do not, however, inherit our present disposition to intolerance solely from the Middle Ages. As animals and children and savages, we are naïvely and unquestionably intolerant. All divergence from the customary is suspicious and repugnant. It seems perverse, and readily suggests evil intentions. Indeed, so natural and spontaneous is intolerance that the question of freedom of speech and writing scarcely became a real issue before the seventeenth century. We have seen that some of the Greek thinkers suffered for their new ideas. The Roman officials, as well as the populace, pestered the early Christians, not so much for the substance of their views as because they were puritanical, refused the routine reverence to the gods, and prophesied the downfall of the State.

But with the firm establishment of Christianity edicts began to be issued by the Roman emperors making orthodox Christian belief the test of good citizenship. One who disagreed with the emperor and his religious advisers in regard to the relation of the three members of the Trinity was subject to prosecution. Heretical books were burned, the houses of heretics destroyed. So, organized medieval religious intolerance was, like so many other things, a heritage of the later Roman Empire, and was duly sanctioned in both the Theodosian and Justinian Codes. It was, however, with the Inquisition, beginning in the thirteenth century, that the intolerance of the Middle Ages reached its most perfect organization.

Heresy was looked upon as a contagious disease that must be checked at all costs. It did not matter that the heretic usually led a conspicuously blameless life, that he was arduous, did not swear, was emaciated with fasting and refused to participate in the vain recreations of his fellows. He was, indeed, overserious and took his religion too hard. This offensive parading as an angel of light was explained as the devil's camouflage. No one tried to find out what the heretic really thought or what were the merits of his divergent beliefs. Because

he insisted on expressing his conception of God in slightly unfamiliar terms, the heretic was often branded as an atheist, just as today the Socialist is so often accused of being opposed to all government, when the real objection to him is that he may believe in too much government. It was sufficient to classify a suspected heretic as an Albigensian, or Waldensian, or a member of some other heretical sect. There was no use in his trying to explain or justify; it was enough that he diverged.

There have been various explanations of medieval religious intolerance. Lecky, for example, thought that it was due to the theory of exclusive salvation; that, since there was only one way of getting to heaven, all should obviously be compelled to adopt it, for the saving of their souls from eternal torment. But one finds little solicitude for the damned in medieval writings. The public at large thought hell none too bad for one who revolted against God and Holy Church. No, the heretics were persecuted because heresy was, according to the notions of the time, a monstrous and unutterably wicked thing, and because their beliefs threatened the vested interests of that day.

We now realize more clearly than did Lecky that the Church was really a state in the Middle Ages, with its own laws and courts and prisons and regular taxation to which all were subject. It had all the interests and all the touchinesses of a state, and more. The heretic was a traitor and a rebel. He thought that he could get along without the pope and bishops, and that he could well spare the ministrations of the orthodox priests and escape their exactions. He was the "anarchist," the "Red" of his time, who was undermining established authority, and, with the approval of all right-minded citizens, he was treated accordingly. For the medieval citizen no more conceived of a state in which the Church was not the dominating authority than we can conceive of a society in which the present political state may have been superseded by some other form of organization.

Yet the inconceivable has come to pass. Secular authority has superseded in nearly all matters the old ecclesiastical regime. What was the supreme issue of the Middle Ages—the distinction between the religious heretic and the orthodox—is the least of public questions now.

What, then, we may ask, has been the outcome of the old religious persecutions, of the trials, tortures, imprisonings, burnings, and massacres, culminating with the Revocation of the Edict of Nantes? What did the Inquisition and the censorship, both so long unquestioned, accomplish? Did they succeed in defending the truth or "safeguarding" society? At any rate, conformity was not established. Nor did the Holy Roman Church maintain its monopoly, although it has survived, purified and freed from many an ancient abuse. In most

countries of western Europe and in North America one may now believe as he wishes, express, without penal consequences, such religious views as appeal to him, and join freely with others who share his sympathies. "Atheism" is still a shocking charge in many ears, but the atheist is no longer an outlaw. It has been demonstrated, in short, that religious dogma can be neglected in matters of public concern and reduced to a question of private taste and preference.

This is an incredible revolution. But we have many reasons for suspecting that in a much shorter time than that which has elapsed since the Inquisition was founded, the present-day attempt to eliminate by force those who contemplate a fundamental reordering of social and economic relations will seem quite as inexpedient and hopeless as the Inquisition's effort to defend the monopoly of the medieval Church.

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We can learn much from the past in regard to wrong ways of dealing with new ideas. As yet we have only old-fashioned and highly expensive modes of meeting the inevitable changes which are bound to take place. Repression has now and then enjoyed some temporary success, it is true, but in the main it has failed lamentably and produced only suffering and confusion. Much will depend on whether our purpose is to keep things as they

are or to bring about readjustments designed to correct abuses and injustice in the present order. Do we believe, in other words, that truth is finally established and that we have only to defend it, or that it is still in the making? Do we believe in what is commonly called progress, or do we think of that as belonging only to the past? Have we, on the whole, arrived, or are we only on the way, or mayhap just starting?

In the Middle Ages, even in the times of the Greeks and Romans, there was little or no conception of progress as the word is now used. There could doubtless be improvement in detail. Men could be wiser and better or more ignorant and perverse. But the assumption was that in general the social, economic, and religious order was fairly standardized.

This was especially true in the Middle Ages. During these centuries men's single objective was the assurance of heaven and escape from hell. Life was an angry river into which men were cast. Demons were on every hand to drag them down. The only aim could be, with God's help, to reach the celestial shore. There was no time to consider whether the river might be made less dangerous by concerted effort, through the deflection of its torrents and the removal of its sharpest rocks. No one thought that human efforts should be directed to making the lot of humanity progressively better by intelligent reforms in the light of advancing knowledge. The world was a place to escape from on the best terms possible. In our own day this medieval idea of a static society yields only grudgingly, and the notion of inevitable vital change is as yet far from assimilated. We confess it with our lips, but resist it in our hearts. We have learned as yet to respect only one class of fundamental innovators, those dedicated to natural science and its applications. The social innovator is still generally suspect.

To the medieval theologian, man was by nature vile. We have seen that, according to the Christian Epic, he was defiled from birth with the primeval sin of his first parents, and began to darken his score with fresh offenses of his own as soon as he became intelligent enough to do so. An elaborate mechanism was supplied by the Church for washing away the original pollution and securing forgiveness for later sins. Indeed, this was ostensibly its main business.

We may still well ask, Is man by nature bad? And accordingly as we answer the question we either frame appropriate means for frustrating his evil tendencies or, if we see some promise in him, work for his freedom and bid him take advantage of it to make himself and others happy. So far as I know, Charron, a friend of Montaigne, was one of the first to say a good word for man's "animal" nature, and a hundred years later the amiable Shaftesbury pointed out some honestly gentle-

manly traits in the species. To the modern student of biology and anthropology man is neither good nor bad. There is no longer any "mystery of evil." But the medieval notion of *sin*-a term heavy with mysticism and deserving of careful scrutiny by every thoughtful person-still confuses us.

v

Of man's impulses, the one which played the greatest part in medieval thoughts of sin and in the monastic ordering of life was the sexual. The presuppositions of the Middle Ages in the matter of the relations of men and women have been carried over to our own day. As compared with many of the ideas which we have inherited from the past, they are of comparatively recent origin. The Greeks and Romans were, on the whole, primitive and uncritical in their view of sex. The philosophers do not seem to have speculated on sex, although there was evidently some talk in Athens of women's rights. The movement is satirized by Aristophanes, and later Plato showed a willingness in *The Republic* to impeach the current notions of the family and women's position in general.

But there are few traces of our ideas of sexual "purity" in the classical writers. To the Stoic philosopher, and to other thoughtful elderly people, sexual indulgence was deemed a low order of pleasure and one best carefully controlled in the interests of peace of mind. But with the incoming of Christianity an essentially new attitude developed, which is still, consciously or unconsciously, that of most people today.

St. Augustine, who had led a free life as a teacher of rhetoric in Carthage and Rome, came in his later years to believe, as he struggled to overcome his youthful temptations, that sexual desire was the most devilish of man's enemies and the chief sign of his degradation. He could imagine no such unruly urgence in man's perfect estate, when Adam and Eve still dwelt in Paradise. But with man's fall sexual desire appeared as the sign and seal of human debasement. This theory is poignantly set forth in Augustine's *City of God*. He furnished therein a philosophy for the monks, and doubtless his fourteenth book was well thumbed by those who were wont to ponder somewhat wistfully on one of the sins they had fled the world to escape.

Christian monasticism was spreading in western Europe in Augustine's time, and the monkist vows included "chastity." There followed a long struggle to force the whole priesthood to adopt a celibate life, and this finally succeeded so far as repeated decrees of the Church could effect it. Marriage was proper for the laity, but both the monastic and secular clergy aspired to a superior holiness which should banish all thoughts of fervent earthly love. Thus a highly unnatural life was

accepted by men and women of the most varied temperament and often with slight success.

The result of Augustine's theories and of the efforts to frustrate one of man's most vehement impulses was to give sex a conscious importance it had never possessed before. The Devil was thrust out of the door only to come in at all the windows. In due time the Protestant sects abolished monasteries, and some Catholic countries later followed their example. The Protestant clergy were permitted to marry, and the old asceticism has visibly declined. But it has done much to determine our whole attitude towards sex, and there is no class of questions still so difficult to discuss with full honesty or to deal with critically and with an open mind as those relating to the intimate relations of men and women.

No one familiar with medieval literature will, however, be inclined to accuse its authors of prudishness. Nevertheless, modern prudishness, as it prevails especially in England and the United States—our squeamish and shamefaced reluctance to recognize and deal frankly with the facts and problems of sex—is clearly an outgrowth of the medieval attitude which looked on sexual impulse as of evil origin and a sign of man's degradation. Modern psychologists have shown that prudishness is not always an indication of exceptional purity, but rather the reverse. It is often a disguise thrown over repressed sexual interest and sexual preoccupations. It appears to be decreasing among the better educated of the younger generation. The study of biology, and especially of embryology, is an easy and simple way of disintegrating the "impurity complex." "Purity" in the sense of ignorance and suppressed curiosity is a highly dangerous state of mind. And such purity in alliance with prudery and defensive hypocrisy makes any honest discussion or essential readjustment of our institutions and habits extremely difficult.

VI

One of the greatest contrasts between medieval thinking and the more critical thought of today lies in the general conception of man's relation to the cosmos. To the medieval philosopher, as to the stupidest serf of the time, the world was made for man. All the heavenly bodies revolved about man's abode as their center. All creatures were made to assist or to try man. God and the Devil were preoccupied with his fate; for had not God made him in His own image for His glory, and was not the Devil intent on populating his own infernal kingdom? It was easy for those who had a poetic turn of mind to think of nature's workings as symbols for man's edification. The habits of the lion or the eagle yielded moral lessons or illustrated the divine scheme of salvation. Even the written word was to be valued, not for what it seemed to say, but for hidden allegories depict-

ing man's struggles against evil and cheering him on his way.

This is a perennially appealing conception of things. It corresponds to primitive and inveterate tendencies in humanity and gratifies, under the guise of humility, our hungering for self-importance.1 The medieval thinker, however freely he might exercise his powers of logical analysis in rationalizing the Christian Epic, never permitted himself to question its general anthropocentric and mystical view of the world. The philosophic mystic assumes the rôle of a docile child. He feels that all vital truth transcends his powers of discovery. He looks to the Infinite and Eternal Mind to reveal it to him through the prophets of old, or in moments of ecstatic communion with the Divine Intelligence. To the mystic all that concerns our deeper needs transcends logic and defies analysis. In his estimate the human reason is a feeble rushlight which can at best cast a flickering and uncertain ray on the grosser concerns of life, but which only serves to intensify the darkness which surrounds the hidden truth of God.

Mysticism and magic permeated medieval science.

¹St. Ethelred, returning from a pious visit to Citeaux in the days of Henry II, encountered a great storm when he reached the Channel. He asked himself what *he* had done to be thus delayed, and suddenly thought that he had failed to fulfil a promise to write a poem on St. Cuthbert. When he had completed this, "wonderful to say, the sea ceased to rage and became tranquil."-Surtees Society Publications, i, p. 177.

This can well be illustrated by the case of alchemy, a characteristic type of medieval scientific occupation. The medieval alchemist believed, following the tradition of the great Aristotle, that man's body, like all other material things, was composed of four elements, earth, air, fire, and water. Each individual had his own particular mixture of these-his temperamentum, as they called it. This was determined at conception and birth by the influence of the constellations and planets. The aptitudes, weaknesses, and chances of success or failure of each human being sprang from his elemental composition. Since no one had been properly mixed since Adam, the problem emerged of discovering some sovereign remedy -secretum maximum-which would cleanse and rectify man's composition and so produce a superman, full of physical and mental vigor and enjoying a life prolonged through many joyous centuries. Hence the persistent search for the Elixir, or philosopher's stone, which should produce these marvelous results, as well as transform the baser metals into gold.

There are plenty of reasons for concluding that the hopes of the alchemist were founded upon false assumptions; but the quest for a panacea for human woes has gone on, and has tried widely divergent paths. We are obsessed with the idea that we all have latent powers which are only awaiting the right signal to be set free and glorify life. We have a conviction of suppressed

worth and potency which leads us to suspect that our inabilities are but the symptoms of some physical or mental maladjustment, which might prove to be comparatively simple and remediable, if only we could hit on the right way of dealing with it.

VII

During the fifteenth century Greek was once more revived in Italy. The language had nearly died out in the West about the year 500, and Boethius had made an unsuccessful attempt to perpetuate a knowledge of the chief Greek writers by translating them into Latin, since obviously all knowledge of Greek works was bound to vanish so soon as the knowledge of the language formerly possessed by educated Romans disappeared. For several centuries before Chrysolorus began to teach Greek to a group of eager disciples in Florence in 1396, we find few allusions to Greek works.² While the names of Homer and Plato were not forgotten, only a few scholars of the twelfth century knew of the existence of Æschylus or Sophocles, of Herodotus or Thucydides. The Humanists of the fifteenth century devoted themselves to rediscovering every vestige of Greek literature that could be found, as well as such Latin writers as Tacitus and Lucretius, who had been forgotten. They translated the

^a There was, however, some revival of interest in Greek literature from the twelfth century onward, a matter to which Professor C. H. Haskins has given much attention.

Greek books into Latin, and thus rendered current in intellectual circles those works that still remain to us from classical antiquity.

It is, however, a grave mistake to assume that this renewed interest in the Greek and Roman authors betokened a revival of Hellenism, as has commonly been supposed. The libraries described by Vespassiano, a Florentine bookseller of the fifteenth century, indicate the least possible discrimination on the part of his patrons. Ficino, the translator of Plato, was an enthusiastic Neoplatonist, and to Pico della Mirandola the Jewish Cabbala seemed to promise infinite enlightenment. In short, Plato was as incapable in the fifteenth century of producing an intellectual revolution as Aristotle had been in the thirteenth. With the exception of Valla, whose critical powers were perhaps slightly stimulated by acquaintance with the classics, it must be confessed that there was little in the so-called "New Learning" to generate anything approaching an era of criticism. It is difficult, to be sure, to imagine a Machiavelli or an Erasmus in the thirteenth century, but it is likewise difficult to determine the numerous and subtle changes which made them possible at the opening of the sixteenth; and it is reckless to assume that the Humanists were chiefly responsible for these changes.

The defection of the Protestants from the Roman Catholic Church was not connected with any decisive

intellectual revision. Such ardent emphasis has been constantly placed upon the differences between Protestantism and Catholicism by representatives of both parties that the close intellectual resemblance of the two systems; indeed their identity in nine parts out of ten, has tended to escape us. The early Protestants, of course, accepted, as did the Catholics, the whole patristic outlook on the world; their historical perspective was similar, their notions of the origin of man, of the Bible, with its types, prophecies, and miracles, of heaven and hell, of demons and angels, are all identical. To the early Protestants, as to Catholics, he who would be saved must accept the doctrine of the triune God and must be ever on his guard against the whisperings of reason and the innovations suggested by scientific advance. Luther and Melanchthon denounced Copernicus in the name of the Bible. Melanchthon reedited, with enthusiastic approval, Ptolemy's astrology. Luther made repeated and bitter attacks upon reason; in whose eyes he freely confessed the presuppositions of Christianity to be absurd. Calvin gloried in man's initial and inherent moral impotency; and the doctrine of predestination seemed calculated to paralyze all human effort.

The Protestants did not know any more about nature than their Catholic enemies; they were just as completely victimized by the demonology of witchcraft. The Protestant Revolt was not begotten of added scientific knowledge, nor did it owe its success to any considerable confidence in criticism. As Gibbon pointed out, the loss of one conspicuous mystery—that of transubstantiation— "was amply compensated by the stupendous doctrines of original sin, redemption, faith, grace, and predestination" which the Protestants strained from the epistles of St. Paul. Early Protestantism was, from an intellectual standpoint, essentially a phase of medieval religious history.

VIII

In order that modern science might develop it is clear that a wholly new and opposed set of fundamental convictions had to be substituted for those of the Middle Ages. Man had to cultivate another kind of self-importance and a new and more profound humility. He had to come to believe in his capacity to discover important truth through thoughtful examination of things about him, and he had to recognize, on the other hand, that the world did not seem to be made for him, but that humanity was apparently a curious incident in the universe, and its career a recent episode in cosmic history. He had to acquire a taste for the simplest possible and most thoroughgoing explanation of things. His whole mood had to change and impel him to reduce everything so far as possible to the commonplace.

This new view was inevitably fiercely attacked by the mystically disposed. They misunderstood it and berated

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its adherents and accused them of robbing man of all that was most precious in life. These, in turn, were goaded into bitterness, and denounced their opponents as pig-headed obscurantists.

But we must, after all, come to terms in some way with the emotions underlying mysticism. They are very dear to us, and scientific knowledge will never form an adequate substitute for them. No one need fear that the supply of mystery will ever give out; but a great deal depends on our taste in mystery—that certainly needs refining. What disturbs the so-called rationalist in the mystic's attitude is his propensity to see mysteries where there are none, and to fail to see those that we cannot possibly escape. In declaring that one is not a mystic, one makes no claim to be able to explain everything, nor does he maintain that all things are explicable in scientific terms.³

Indeed, no thoughtful person will be likely to boast that he can fully explain anything. We have only to scrape the surface of our experiences to find fundamental mystery. And how, indeed, as descendants of an extinct simian race, with a mind still in the early stages of accumulation, should we be in the way of reaching ultimate truth at any point? One may properly urge, how-

^a Tertium Organum, the Third Canon of Thought, by P. D. Ouspensky, shows how exacting philosophic and scientific thought may land one in what would ordinarily be considered a highly mystical frame of mind.

ever, that as sharp a distinction as possible be made between fictitious mysteries and the unavoidable ones which surround us on every side. How milk turned sour used to be a real mystery, now partially solved since the discovery of bacteria; how the witch flew up the chimney was a gratuitous mystery with which we need no longer trouble ourselves. A "live" wire would once have suggested magic; now it is at least partially explained by the doctrine of electrons.

It is the avowed purpose of scientific thought to reduce the number of mysteries, and its success has been marvelous, but it has by no means done its perfect work as yet. We have carried over far too much of medieval mysticism in our views of man and his duty toward himself and others.

We must now proceed to recall the method adopted by students of the natural sciences in breaking away from the standards and limitations of the medieval philosophers and establishing new standards of their own. They thus prepared the way for a revolution in human affairs in the midst of which we now find ourselves. As yet their type of thinking has not been applied on any considerable scale to the solution of social problems, and in the general conduct of life. By learning to understand and appreciate the scientific frame of mind as a historical victory won against extraordinary odds, we may be encouraged to cultivate and popularize a similar atitude toward the study of man bimself.

CHAPTER VII

SCIENCE FUMBLES ALONG

T^F THE up-to-date historian of today looks upon the Renaissance and the Reformation as the terminal phases of medievalism, he has a rational substitute to offer for them as the dominating factor in the origin of modern times. This is the expansion of Europe and the many cultural reactions flowing therefrom. This widening of the European horizon began with the Crusades and the travels of men like Marco Polo, and continued until the period of contemporary imperialism. The Crusades brought Europeans into closer contact with the Greek civilization of the Byzantine Empire and with the remarkably high culture of the Moslem lands in the East. This interchange had a marked influence in promoting intellectual curiosity, in stimulating interest in Greek literature, and in acquainting western European scholars with the diverse mathematical and scientific works of the Moslems. Further cultural interest and more fruitful commercial contacts grew out of the medieval travels to the Far East.

From the time of Columbus onward, this dynamic

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influence of expanding European contacts proceeded apace. The contact of different cultures has been, perhaps, the most civilizing of all factors in human advancement. Europeans came into touch with many cultures some higher and some more primitive than their own. Wealth and leisure came from the increased commercial activity and the new economic developments. The monarchs were able to command greater resources and were thus able to bring feudalism to an end and to set up strong centralized states that lessened provincialism and created order and stability. Scientific curiosity of all kinds was stimulated in regard to both man and nature. New scientific data relative to flora and fauna, geography, manners and customs, religious institutions and the like, were brought back to Europe in profusion. A new intellectual age dawned in western Europe. Modern science came into being, and the scientific developments of the period from 1400 to 1800 dwarfed any other previous achievements in this line of human endeavor, not even excepting the remarkable advances wrought by the Hellenistic scientists of old. To these scientific discoveries we may now turn our attention.

Mankind has always been ready to look for miracles. There are volumes of them on record, but they differ essentially from the increasing wonders of our time. They were performed with the aid of a god or devil or by means of some charm or magic. They were timed for

a particular occasion, as when Joshua called upon the Lord and the sun was stayed in his course for about a whole day in order that the five kings of the Amorites might be hung on five trees. The huge tomes containing the Acts of the Saints are filled with miraculous cures of this unfortunate or that. The witches with Satan's aid plagued individuals or at times maliciously ruined crops and destroyed cattle. These were the kinds of wonders that were formerly looked for. And, as might be expected, there are many who still harbor this ancient taste in miracles. The Reverend John Roach Straton once publicly announced that an angel had opened the front door of the pastor's car in order to save his wife from a severe accident. But should one run through the files of a modern newspaper he would find very few miracles of this old type reported.

The first suggestion of the present method of wonderworking we find in a curious letter of Roger Bacon, written well over five hundred years ago "On the hidden workings of Nature and Art and the Emptiness of Magic." He conjectured that the most marvelous results would come from experimentation "which will make all kinds of magic appear trivial and absurd." Carriages can be made to run with incredible velocity without animals to draw them. Lifting machines, suspension bridges, and devices for flying can all be contrived if one will but stop reading old books and set to work to study the ways of nature. The hopes of Roger Bacon have been realized -the steel jaws of steam shovels bite out mouthfuls of rocks and clay and spew them into long winding ribbons along which millions of private locomotives course with incredible speed over hill and dale. Above, one may hear the whirring of the airplane.

Francis Bacon living in the days of Shakespeare expanded in his eloquent and ingenious fashion all the arguments of the thirteenth century Franciscan. He added to all the previous conceptions of God that of man's *playfellow*, for the Divine Majesty seems to take delight in hiding his works from his children and rejoice in their finding them out. This was a gracious method of settling the conflict between science and religion which, unfortunately, has been lost sight of in all discussions since.

The modern wonderworker invokes neither God nor the devil. He is humble in the face of the mysteries which confront him. The more he finds out the less it seems to him he knows. He has faith and inexhaustible patience. He encounters disappointment with fortitude. He has to make infinite sacrifices of usual diversion, sometimes of health, and now and then meets a martyr's fate. His virtues are different from those of a holy man of old, but rather more difficult to live up to. He has fewer assurances than those of the saint and his self-reliance must be of a stiffer quality. His temptations are many and his struggle against them bitter. He has to meet the questions

of his sceptical confrères, not merely startle a gaping multitude.

Since the scientist is supplanting the ancient saint and scholar, it is well worth while to point out how differently he thinks and acts from the thoughtful men who preceded him. Of course "The Scientist" is a sort of myth; it really means the scientifically minded. An investigator need not pursue his work by means of test tubes, electric currents, microscopes and telescopes to be scientifically minded. He may be studying man as well as the world in which we live. The chief point is the temper in which the investigation is carried on.

Science may be defined as our present body of knowledge of whatever kind which has been accumulated in a scientific spirit. Now the older holy men and scholars assumed that the best worth-while things had already been discovered and set down either in the Bible or by Aristotle, whose works constituted for the thirteenthcentury thinkers a sort of inspired body of information which they had to accept like the Bible. They sought to interpret both and make them clearer, but they felt bound by the information which they contained. In short, they relied chiefly on authority and they dedicated themselves to explaining ancient books rather than investigating things.

In contrast with this view that in some mysterious way thinkers of long ago had come upon all the great truths about man and his world, the modern scientificallyminded are suspicious of all old books. They rely mainly upon current reports of investigators. As I recollect in the Marine Biological Laboratory at Woods Hole there are upwards of five hundred periodicals relating to the biological sciences available in their current issues, and the library as a whole consists, not of books, but of collections of pamphlets, proceedings, and contributions. To the investigator a book is already antiquated before it is published. To the scientifically-minded Nature is as yet so imperfectly understood that all investigators are but gropers. They are ever ready for fresh news and views. They respect the earlier explorers, but freely revise and build upon what Newton, Lavoisier, Dalton, Faraday, Darwin, Pasteur and all the rest have pointed out. They are thus in no way pledged to earlier conclusions. It is not so much their business to prove their predecessors right or wrong, as to carry on their work.

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Until recently, ancient conclusions in regard to the nature and conduct of men and women were felt to be far more important and far more firmly established than those in the realm of natural science. This very common idea was not long ago solemnly repeated by the eminent president of Columbia University. Dr. Butler says "It is one of the curious and unexplained phenomena of human history that long before man had any but the most general and superficial knowledge of the structure and laws of the physical universe, his spirit poured itself out in amazing revelations and conquests. The high-water mark of religious thought and feeling, of philosophic insight and interpretation [was attained] . . . when men had not so much as an inkling of that elementary knowledge of the material universe which is now possessed by every intelligent child."

Just when the tide rose highest in religious thought and philosophic insight Dr. Butler prudently refrains from stating. It must, however, have been a long time ago because he places it before there was so much as an inkling of the knowledge now possessed by every intelligent child in regard to the world in which he finds himself. Any medieval monk would have agreed heartily with Dr. Butler. But this confidence in ancient lore is not a "curious and unexplained" aspect of human history; on the contrary, it is exactly what might have been expected. It has always been easier to accept old notions than to gain new ones. The holy man could comfortably sit under a tree and imagine a suitable order of the world or, like Socrates, pester with awkward questions those he met in the Athenian market-place. It was not so hard to get hold of the book of Job and write a fantastic commentary on it, as did Gregory the Great, finding deep allegorical meanings in the number of oxen and asses Job

possessed, or to rephrase the works of Aristotle as did Thomas Aquinas. After reading the scanty accounts of the Garden of Eden, Calvin could be quite sure that the first man and woman had been perfect, but that they brought sin into the world and immersed all posterity "in the most horrible pestilences, blindness, weakness, filthiness, emptiness and injustice." In this world, under favorable circumstances, one can say almost anything and get it believed. The older paths to convictions about our nature and duties were easy, and naturally the first for man to travel. The new path is arduous, but already it has led to discoveries which promise a profound revolution in our estimate of man and his prospects.

I may say that I am uncommonly partial to old books and that I read them quite as often and perhaps more carefully than some who express more touchy and vociferous reverence for them. As I read them I find myself quite at odds with President Butler. Indeed, I venture to guess that books which have appeared in the last half century cast more light on man, his nature, history, and possibilities, than can be found in all the revered works of the past. I am not referring to the great prophets, poets, and dramatists, whose insight, considering their lack of information, fills me with a certain awe. Their penetration, boldness, and beauty of expression in picturing human longings, conflicts, victories, and defeats, and all the loveliness and sadness of life, will hardly hereafter be excelled. I have in mind the professional philosophers, theologians, and moralists who in their dull and lengthy fashion have undertaken to bring forth eternal verities about the universe and set man right about virtue and duty and their successful pursuit. This class seems to make little headway; they have been notoriously unsuccessful. The reasons for this are now becoming apparent. It was essential to escape their assumptions and methods of argumentation before the knowledge of Nature could take the start it did some three hundred years ago. It is equally indispensable to desert the older notions and methods of thinking before the knowledge of man himself can increase.

The astonishing results of this repudiation of old habits of thinking are as yet far more conspicuous in the realm of natural science and invention than in the study of man himself. Examples encompass us on every side. The bolts of Zeus have been domesticated; they are busy about the house, cooking, washing, and ironing, and giving light at night. They accompany us on our travels, and enable us to talk to those thousands of miles away. They have transformed our daily life, opened up possibilities of ease and enjoyment to which none of the profoundest of ancient philosophers made any contribution. The facilities of living have indeed increased so rapidly that we need more than ever before guidance in utilizing them and making the most of the ease and leisure that they afford. The theories of the traditional philosophers seem to have less and less relevance to good living. They were working upon false assumptions, and appear now to have been ignorant of just those things which were essential to giving real help to their fellow men. They did not understand themselves or other people. They did not know enough to pursue the fruitful kind of research that the students of plants and animals adopted.

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At the opening of the seventeenth century a man of letters, of sufficient genius to be suspected by some of having written the plays of Shakespeare, directed his distinguished literary ability to the promotion and exaltation of natural science. Lord Bacon was the chief herald of that habit of scientific and critical thought which has played so novel and all-important a part in the making of the modern mind. He felt that he had discovered why the human mind, enmeshed in medieval metaphysics and indifferent to natural phenomena, had hitherto been a stunted and ineffective thing, and how it might be so nurtured and guided as to gain undreamed-of strength and vigor.

And never has there been a man better equipped with literary gifts to preach a new gospel than Francis Bacon. He spent years in devising eloquent and ingenious ways

of delivering learning from the "discredits and disgraces" of the past, and in exhorting man to explore the realms of nature for his delight and profit. He never wearied of trumpeting forth the glories of the new knowledge which would come with the study of common things and the profitable uses to which it might be put in relieving man's estate. He impeached the medieval schoolmen for spinning out endless cobwebs of learning, remarkable for their fineness, but of no substance or spirit. He urged the learned to come out of their cells, study the creations of God, and build upon what they discovered a new and true philosophy.

Even in his own day students of natural phenomena had begun to carry out Bacon's general program with striking effects. While he was urging men to cease "tumbling up and down in their own reason and conceits" and to spell out, and so by degrees to learn to read, the volume of God's works, Galileo had already begun the reading and had found out that the Aristotelian physics ran counter to the facts; that a body once in motion will continue to move for ever in a straight line unless it be stopped or deflected. Studying the sky through his newly invented telescope, he beheld the sun spots and noted the sun's revolution on its axis, the phases of Venus, and the satellites of Jupiter. These discoveries seemed to confirm the ideas advanced long before by Copernicus—the earth was *not* the center of the universe and the heavens were *not* perfect and unchanging. He dared to discuss these matters in the language of the people and was, as every one knows, condemned by the Inquisition.

This preoccupation with natural phenomena and this refusal to accept the old, established theories until they had been verified by an investigation of common fact, was a very novel thing. It introduced a fresh and momentous element into our intellectual heritage. We have recalled the mysticism, supernaturalism, and intolerance of the Middle Ages, their reliance on old books, and their indifference to everyday fact except as a sort of allegory for the edification of the Christian pilgrim. In the medieval universities the professors, or "schoolmen," devoted themselves to the elaborate formulation of Christian doctrine and the interpretation of Aristotle's works. It was a period of revived Greek metaphysics, adapted to prevailing religious presuppositions. Into this fettered world Bacon, Galileo, Descartes, and others brought a new aspiration to promote investigation and honest, critical thinking about everyday things.

These founders of modern natural science realized that they would have to begin afresh. This was a bold resolve, but not so bold as must be that of the student of mankind today if he expects to free himself from the trammels of the past. Bacon pointed out that the old days were not those of mature knowledge, but of youthful human ignorance. "These times are the ancient times, when the world is ancient, and not those we count ancient, *ordine retrogrado*, by a computation backward from ourselves." In his *New Atlantis* he pictures an ideal state which concentrated its resources on systematic scientific research, with a view to applying new discoveries to the betterment of man's lot.

Descartes, who was a young man when Bacon was an old one, insisted on the necessity, if we proposed to seek the truth, of questioning *everything* at least once in our lives. To all these leaders in the development of modern science doubt, not faith, was the beginning of wisdom. They doubted—and with good reason—what the Greeks were supposed to have discovered; they doubted all the old books and all the university professors' lecture notes. They did not venture to doubt the Bible, but they eluded it in various ways. They set to work to find out exactly what happened under certain circumstances. They experimented individually and reported their discoveries to the scientific academies which began to come into existence.

As one follows the deliberations of these bodies it is pathetic to observe how little the learning of previous centuries, in spite of its imposing claims, had to contribute to a fruitful knowledge of common things. It required a century of hard work to establish the most elementary facts which would now be found in a child's book. How water and air act, how to measure time and temperature and atmospheric pressure, had to be discovered. The microscope revealed the complexity of organic tissues, the existence of minute creatures, vaguely called infusoria, and the strange inhabitants of the blood, the red and white corpuscles. The telescope put an end to the flattering assumption that the cosmos circled around man and the little ball he lives on.

Without a certain un-Greek, practical inventive tendency which, for reasons not easily to be discovered, first began to manifest itself in the thirteenth century, this progress would not have been possible. The new thinkers descended from the magisterial chair and patiently fussed with lenses, tubes, pulleys, and wheels, thus weaning themselves from the adoration of man's mind and understanding. They had to devise the machinery of investigation as investigation itself progressed.

Moreover, they did not confine themselves to the conventionally noble and elevated subjects of speculation. They addressed themselves to worms and ditch water in preference to metaphysical subtleties. They agreed with Bacon that the mean and even filthy things deserve study. All this was naturally scorned by the university professors, and the universities consequently played little or no part in the advance of natural science until the nineteenth century.

Nor were the moral leaders of mankind behind the intellectual in opposing the novel tendencies. The clergy

did all they could to perpetuate the squalid belief in witchcraft, but found no place for experimental science in their scheme of learning, and judged it offensive to the Maker of all things. But their opposition could do no more than hamper the new scientific impulse, which was far too potent to be seriously checked.

IV

The progress of scientific discovery was hastened, strangely enough, by two grave misapprehensions: the belief in alchemy and the confidence in astrology, both of which had been handed down from the Greeks and Romans to the scholars and investigators of the Middle Ages. Modern chemistry developed from alchemy, and modern astronomy from astrology.

The alchemist, as we have seen, carried on his experiments with the hope of finding a so-called "elixir," or "philosopher's stone," which, if added to baser metals, like lead, mercury, or even silver, would transmute them into gold. It was also believed that the same marvelous elixir would, if taken in small quantities, restore youth to the aged and prolong life indefinitely. Mysterious directions were passed on from the Greeks and Arabs, which roused hope in western Europe that some of the strange substances produced in retort, crucible, and mortar would at last prove to be the potent and long-sought combination. Though no one discovered the philosopher's stone, the patient search for it brought to light curious and useful compounds which could be used in medicine and in industries. To these were given picturesque names, such as spirits of wine and of hartshorn, cream of tartar, and oil of vitriol.

The progress of chemistry was much impended by the respect for the old idea, which even Aristotle had maintained, that there were four "elements"-earth, air, fire, and water-and that heat and cold, dryness and dampness, were the fundamental qualities of matter. Even in the eighteenth century the arguments of a German chemist to prove that flame was an element, which was latent in bodies until they were subjected to heat, were accepted by the greatest minds of the time. The old hopes of finding the philosopher's stone had, however, been dissipated, chiefly by the English chemist Boyle (1627-91). New substances were discovered, and the various gases-or "airs," as they were first called-were isolated: first, "inflammable air," or hydrogen, by Boyle; later, carbonic-acid gas, or "fixed air," and "nitrous air," or nitrogen.

Modern chemistry was not, however, really established until the latter part of the eighteenth century, when the celebrated French chemist Lavoisier (born in 1743 and beheaded by the guillotine in 1794), during some fifteen years of experimentation, succeeded in decomposing air and in showing that combustion was really the violent combination of the oxygen in the air with any material capable of rapid oxidization. By careful weighing he showed that the products of combustion were always exactly equal to the burned substance plus the oxygen used in burning. It was he also who first decomposed water into oxygen and hydrogen and then recombined these gases into water.

Lavoisier coöperated in drawing up a new system for renaming chemical substances, which was presented to the French Academy of Sciences in 1787. The names adopted—"sulphates," "nitrates," "oxides," etc.—are still employed in our chemistry texts. Lavoisier's use of the balance, his successful analyses and recombinations, his correct conception of combustion and of the more important gases, enabled the chemists rapidly to multiply their discoveries and apply their knowledge to all manner of practical processes which have given us such diverse and important results as photography, new and powerful explosives, aniline dyes, celluloid, and anesthetics and many other potent drugs.

Just as the false hopes of alchemy promoted the development of chemistry, so the vain hopes of forecasting the future from the stars forwarded astronomy. Until recent times even the most intelligent persons have believed that the heavenly bodies influenced the fate of mankind; consequently, that a careful observation of the position of the planets at the time of a child's conception

and birth would make it possible to forecast his life. In the same way important enterprises were to be undertaken only when the influence of the stars was auspicious. Physicians believed that the efficacy of their medicines depended upon the position of the planets. This whole subject of the influence of the stars upon human affairs was called astrology and was, in some cases, taught in the medieval universities. While those who studied the heavens gradually came to the conclusion that the movements of the planets had no effect upon humanity, yet the facts which the astrologers had discovered became the basis of modern astronomy.

All through the Middle Ages, even in the darkest period, learned men had thought that the earth was a globe, and had not greatly underrated its size. They knew also that the planets and stars were very large and millions of miles away from the earth. But they nevertheless had a very inadequate notion of the tremendous extent of the universe. They mistakenly believed that the earth was its stationary center, and that the sun and all the heavenly host circled about it every day.

Some of the Greek thinkers had suspected that this was not true; but a Polish astronomer, Kopernick (commonly known by his Latinized name of Copernicus), was the first modern writer to maintain boldly that the earth and the other planets revolved about the sun. His great work, *Upon the Revolutions of the Heavenly* *Bodies*, was published in 1543, just after his death. But he was unable to prove his theory, which was declared to be foolish and wicked by Catholics and Protestants alike, since it appeared to contradict the teachings of the Bible. Nevertheless, Copernicus opened the way for an entirely new conception of the heavenly bodies and their motions, which continued with the help of new mathematical knowledge.

The truths which had been only suspected by earlier astronomers were demonstrated to the eye by Galileo (1564-1642). By means of a little telescope, which was not as powerful as the best modern field-glasses, he discovered in 1610 the spots on the sun. The movement of these made it plain that the sun was turning on its axis in the same way that astronomers had begun to suspect that the earth turned. Galileo's little telescope showed, too, that the moons of Jupiter were revolving about their planet in the same way that the planets revolve about the sun.

The year that Galileo died the famous English mathematician, Isaac Newton (1642-1727), was born. Newton carried on the work of earlier astronomers by the application of mathematics, and proved that the force of attraction which we call gravitation was a universal one, and that the sun, the moon, the earth, and all the heavenly bodies are attracted to one another inversely as the square of the distance.

While the telescope aided the astronomer, the microscope contributed far more to the extension of practical knowledge. Even before the invention of the microscope, the Spanish anatomist, Vesalius, had given us a far more complete idea of the nature of the human body, and the English physician, William Harvey, had founded dynamic physiology by his discovery of the circulation of the blood. This latter discovery was extended into a physiological philosophy by Descartes. Rude and simple microscopes were used with advantage as early as the seventeenth century. Leeuwenhoek (1632-1723), a Dutch linen merchant, so far improved his lenses that he discovered (1668) the blood corpuscles and the "animalculae," or minute organisms of various kinds found in pond water and elsewhere. Malpighi, Grew and others extended the use of the microscope to a study of minute aspects of plant life. The microscope has been rapidly perfected since the introduction of better kinds of lenses early in the nineteenth century, so that it is now easily possible to magnify minute objects to two or three thousand times their diameters. We shall return to this matter later.

Not many years after Lord Bacon's death the government in England and France began to take an interest in promoting general scientific progress. The Royal Society was incorporated in London in 1662 under the king's patronage and soon began to issue its *Proceedings*, which

still appear regularly. Four years later Colbert definitely organized the French Academy of Sciences. These academies, together with that founded by the Prussian king in 1700 in Berlin, by their discussions, by the publication of their proceedings, and by their encouragement and support of special investigations have served greatly to hasten scientific progress. Colbert established the famous Observatory of Paris in 1667; a few years later (1676) the still more famous observatory at Greenwich, near London, was completed. Periodicals devoted to scientific matters began to appear. One of the very earliest and most important was the *Journal des Savants*, encouraged by Colbert, which, except for a few years during the French Revolution, has been issued regularly for two centuries and a half.

Scientific expeditions to distant parts of the earth were also subsidized by the European governments, especially by France, to determine by simultaneous observations at widely distant points the exact size and shape of the globe and the distance of the moon from the earth. In 1769, when Venus crossed the face of the sun—an event that would not occur again for over a hundred years astronomers were eager to avail themselves of this unusual opportunity to calculate more exactly than ever before the distance of the sun from the earth. Accordingly, various governments arranged to dispatch observers to suitable places: The English to Hudson Bay, Tahiti, and Madras; the French to California and India; the Danes to the North Cape; the Russians to Siberia. This was an early instance of what has now become an established practice in the case of any unusual astronomical event.

The observation and experimentation of which we have been speaking deeply affected men's conceptions of the earth and of the universe at large. Of the many new scientific ideas, by far the most influential was the conviction that all things about us seem to follow certain natural and immutable rules; and it is the determination of these "laws" and the seeking out of their applications to which the modern scientific investigator devotes his efforts, whether he be calculating the distance of a nebula or noting the effect of light on the actions of an amœba. He has given up all hope of reading man's fate in the stars or of producing any results by magical processes. He is convinced that the natural laws have been found to work regularly in every instance where they have been carefully observed. Unlike the medieval scholars, therefore, he hesitates to accept as true the reports which reach him of miracles; that is, of alleged exceptions to the general laws in which he has come to have such confidence. Moreover, his study of the regular processes of nature has enabled him, as Roger Bacon foresaw, to work wonders far more marvelous than any attributed to the medieval magician.

The path of the scientific investigator has not always been without its thorns. Mankind has changed its notions with reluctance. The churchmen and the professors in the universities were wedded to the conceptions of the world which the medieval theologians and philosophers had worked out, mainly from the Bible and Aristotle. They clung to the old books that they and their predecessors had long used in teaching. They had no desire to begin a long and painful examination of the innumerable substances and organisms from a study of which the newer scientists were gathering information that refuted the venerated theories of the past.

Theologians were especially prone to denounce scientific discoveries on the ground that they did not harmonize with the teachings of the Bible as commonly accepted. This Lord Bacon had foreseen. It was naturally a great shock to them, and also to the public at large, to have it suggested that man's dwelling-place, instead of being God's greatest work, to which he had subordinated everything and around which the whole starry firmament revolved, was, after all, but a tiny speck in comparison with the whole universe, and its sun but one of an innumerable host of similar glowing bodies of stupendous size, any one of which might have its particular family of planets revolving about it.

The bolder thinkers were consequently sometimes made to suffer for their ideas, and their books were pro-

hibited or burned. Galileo was forced to say that he did not really believe the earth revolved about the sun; and he was kept in partial confinement for a time and ordered to recite certain psalms every day for three years for having ventured to question the received views in a book which he wrote in Italian, instead of Latin, so that the public at large might read it.

In the nineteenth century there came another great series of scientific discoveries which were even more disconcerting to the conservative and traditional mind those connected with the doctrine of evolution.

v

Until the middle of the nineteenth century practically everyone in Europe believed that the earth had existed for not more than five or six thousand years. This was the Christian tradition based upon the account of the generations of man in Genesis. St. Augustine declared confidently in his *City of God* that not six thousand years had elapsed since the creation of man. God, it was believed, had created not only the earth, but the stars, together with all the species of plant and animal life, as well as the first man and the first woman, during the successive days of a single week. An Anglican prelate, Archbishop Usher, gave definiteness to this idea in his elaborate *Annals of the Old and the New Testament*, published in Latin in Cromwell's time (1650-54). After

a careful study of the Scriptures he reached the conclusion that the terrestrial animals and Adam were created on Friday, October 28, 4004 B.C. Eve, too, was made from Adam's rib on the same day, after Adam had given names to the animals. Usher's chronology was inserted by an unknown hand in the margin of the Authorized Version of the Bible and so became familiar to millions of readers, who accepted the glosses and the text as equally authoritative.

For this belief an entirely different one has been substituted by geologists, paleontologists, anthropologists, and astronomers. There is some difference of opinion as to how the earth originally came about, but none regarding its tremendous age from a human standpoint. While geologists do not all reach the same conclusions in regard to the period when the earth became suitable for plant or animal life, they agree that all things have come to their present state through a gradual process, extending through thousands of millions of years. There is no means as yet of settling this matter of geological dates. It may have required a hundred million or a thousand million years for the sedimentary rocks to be laid down in the beds of ancient seas. Many of these rocks contain fossils which indicate that plants and animals have existed on the globe from the very remote periods when some of the earlier strata were formed. Accordingly, it seems not unlikely that for at least a hundred million years the

earth has had its seas and its dry land, differing little in temperature and geographical variety from the globe on which mankind wanders about today.

As early as 1795 the Scotch geologist James Hutton published his conclusion that the earth had gradually assumed its present form by slow natural processes, and he roused a storm of protest by declaring that he found "no traces of a beginning and no prospect of an end." In 1830-33 Sir Charles Lyell published his famous Principles of Geology, in which he explained at length the manner in which the gradual contraction of the globe, the action of rain and frost, had, through countless eons and without great general convulsions or cataclysms, formed the mountains and valleys and laid down the strata of limestone, clay, and sandstone. He showed, in short, that the surface of the earth was the result of familiar, everyday causes, most of which can still be seen in operation. The work of later geologists has served to substantiate Lyell's views.

As for the starry universe, of which our second-rate sun and his little following of planets form an infinitesimal part, that seems to our homely methods of reckoning in miles and years to have existed always and to be infinite in extent. Traveling with the speed of the fastest thing we know-light-at the rate of one hundred and eighty-six thousand miles a second, one might reach Neptune, on the outermost bounds of our solar system,

in about four hours, whereas it would take over four years at the same speed to reach the star nearest us. By substituting photographic plates for the human eye, it has been found that, with long exposures, hundreds of millions of stars reveal themselves, too faint to be seen with the eye through the best telescopes. It is suspected that the very distant nebulæ are other vast systems of suns lying outside our whole stellar universe. All the heavenly bodies are moving with incredible rapidity; the earth not only revolves about its sun, but the sun travels through space like all the other stars. So far as the constitution of the stars throughout the universe is concerned, the spectroscope indicates that they are all made of the same chemical elements with which we are familiar on the earth: hydrogen, helium, oxygen, nitrogen, carbon, sodium, iron, nickel, and so forth. And such samples as fall on the earth in the form of meteoric dust or larger masses have so far proved, on analysis, to contain no materials strange to the earthly chemist. And all this vast cosmos appears to have come about through evolutionary processes and to be in a state of continual flux today.

VI

Just as the earth itself and the surrounding universe have slowly changed through the operation of natural forces, so plants and animals appear to have assumed

their present forms gradually. Buffon, a French naturalist, who was busy on a vast *Natural History* at the time that Diderot's *Encyclopedia* was in course of publication, pointed out that all mammals closely resembled one another in their structure, unlike as they may appear to the careless observer. If a horse be compared point by point to a man, "our wonder," Buffon declares, "is excited rather by the resemblances than by the differences between them." As he noted the family likenesses between even widely divergent creatures he admitted that it looked as if nature might, if sufficient time were allowed, "have evolved all organized forms from one original type."

There appeared in England, in 1844, a volume entitled *Vestiges of the Natural History of Creation*, by a writer who carefully concealed his name.¹ For the accepted idea of the instantaneous creation of all living species of plants and animals he substituted the notion of development through long periods:

The whole train of animated beings, from the simplest and oldest up to the highest and most recent, are, then, to be regarded as a series of advances of the principle of development, which have depended upon external physical circumstances, to which the resulting animals are appropriate. I contemplate the whole phenomena as having been in the first place arranged in the counsels of Divine Wisdom to take place, not only upon this sphere, but upon all others in

¹His identity was later revealed as Robert Chambers.

space, under necessary modifications, and as being carried on from first to last, here and elsewhere, under the immediate favor of the creative will or energy.

In 1852 Herbert Spencer, in one of his very earliest works, gave many reasons for supposing that the whole visible universe—the earth and all its plant and animal inhabitants, including even man himself and all his ideas and institutions—has slowly developed by natural processes.

Seven years later (1859) Charles Darwin's Origin of Species by Means of Natural Selection, the result of years of most patient study of plants and animals, finally brought the whole theory of evolution to the attention of the world at large. In his introduction he says:

Although much remains obscure, I can entertain no doubt, after the most deliberate and dispassionate judgment of which I am capable, that the view which most naturalists till recently entertained, and which I formerly entertained namely, that each species has been independently created—is erroneous. I am fully convinced that species are not immutable, but that those belonging to what are called the same genera are lineal descendants of some other and generally extinct species.

Darwin pointed out that if any species of animal or plant were left free under favorable circumstances to multiply, it would speedily fill the whole earth. For example, if a single pair of robins or sparrows were allowed

to live and breed unmolested, they might increase to twenty millions in ten years. This is a very moderate instance of the power of multiplication. Since the number of plants and animals shows no actual general increase, it is clear that by far the greater portion of the eggs of birds and fishes, the seeds of plants, and the young of animals are destroyed before they can develop. Excessive heat and cold, rain and drought, are largely responsible for this destruction of potential life; but organisms destroy one another in all sorts of ways, often by merely crowding one another out and consuming all the available food. There is, consequently, a perpetual competition among all living things.

Darwin named this inevitable competition the "struggle for existence." But he is careful to say, "I use this term in a large and metaphorical sense, including dependence of one being upon another, and including (which is more important) not only the life of the individual, but the success in leaving progeny." Those unfamiliar with animals and plants often get the idea that by "struggle for existence" is meant a sort of active warfare, conquest or defeat, devouring or getting devoured. But Darwin was under no such illusion. Survival is in the overwhelming majority of cases a matter of seeming accident—the result of delicate adjustments, not by any means the outcome of a successful struggle in the usual sense of the word. For example, out of ten thousand winged milkweed seeds it is possible that one only may be wafted into a situation suitable to sprouting; of all the burs clinging to a herd of cattle, but one may be detached at just the right point to perpetuate its kind. In any case, of all the seeds and eggs that are formed, only a minute portion ever develop: one in five, in ten, in a thousand, in a million; of the young only a very small percentage reach maturity and reproduce their species.

Darwinism may then be summarized as follows: It was the theory that animal and plant species do not endure indefinitely unchanged; but, owing to the "variations," or peculiar characteristics, which may be observed in every individual, no two of which are exactly alike, those best fitted to survive tend to have a better chance of escaping destruction in the bitter competition of life and of transmitting their advantageous characteristics to their offspring. In this way the increasing complexity of adjustment and the emergence of ever "higher" and more intricate creatures in the scale from the amœba to man seemed to be at least partly explained. Darwin also conjectured that "sexual selection" played a part in this process; by this he meant that the more vigorous, the better armed, or, in the case of birds, "the most melodious or beautiful" males would have the advantage of capturing or attracting the females and would consequently be more likely to have offspring than those individuals with poorer weapons and inferior charms.

Darwin himself attached slight importance to this factor, although it caught the attention of the public.

Among the scientifically-minded who heartily welcomed Darwin's book and approved his theories were Herbert Spencer, Alfred R. Wallace, Thomas Huxley, the American botanist Asa Gray, and the popular German writer Haeckel, all of whom devoted their expert knowledge and gifted pens to the explanation and defense of the new ideas.

The opponents of the evolutionary hypothesis were, however, very loud in their denunciations. Not only religious leaders, but some distinguished men of science, like Alexander Agassiz, utterly refused to revise their opinions. The clergy, both Protestant and Catholic, could find no words too harsh to apply to the patient and careful Darwin, who seemed to them to contradict the express word of God in the Bible and to rob man of all his dignity by suggesting that he had originally sprung from lower animal forms. The new theory seemed to them an "attempt to dethrone God" and substitute mere gradual natural processes for the divine fiat which had called all things into existence. Pope Pius IX declared Darwin's theory to be the result of his natural depravity, and an absurd attempt to degrade man to the level of unreasoning brutes. We have touched more thoroughly on the opposition to Darwinism in an earlier chapter, pointing out, incidentally, that it has continued to our own day.

As for men of science, very few any longer doubt that if man's ancestry could be traced back far enough, it would be found to merge into that of the other higher animals, especially the monkeys and apes, although none of them believe man is directly derived from either of these groups. They accept the evolutionary hypothesis, but a great many feel that Darwinism as an explanation of the origin of species is inadequate and sometimes quite erroneous. For example, many assert that characteristics acquired by an individual cannot be transmitted hereditarily to its offspring, and that so-called sexual selection is based upon false assumptions. In short, further researches into the mysterious complications of natural processes have rendered the whole problem far more intricate and, as yet, more mysterious than it was believed to be even by the modest Darwin and his immediate followers. So it is sometimes said that "Darwinism is dead";² but this is misleading when we stop to reflect that scientific men are all practically agreed that the higher plants and animals, including man himself, have a long lineage of simpler ancestors extending back to the first appearance of life on the globe.

While mountains of books have been written on Darwinism and the descent of man from simian stock, almost

*See above, Chap. II.

all of this literature has been concerned with man's physical heritage. The really great and momentous work on the implications of Darwinism still remains to be written. We now know that "we have descended from the monkeys"-though from no extant form of monkey life. But we have never been told in any full and authoritative fashion just what this means for humanity. There have, to be sure, been plenty of good books on the mentality and psychic traits of the simian species by Köhler, Kohts, Yerkes, and others, but little effort has been made to show what this all means to mankind. So far as I know, the only effort to do this was the admittedly thin, if suggestive, book by the late Clarence Day, This Simian World. Our "human nature," our institutions, our amusements, even our intellectual life, can never be intelligently understood unless we know just what it means to be a member of the simian family.

As Mr. Day points out, it would have made a great deal of difference if we were, let us say, super-cats instead of super-monkeys. We would have a far richer night life, but would find little pleasure bathing at the seashore—or even in our bathtubs. "Watering-places" would be anathema to the race. Only by comprehending our monkey nature can we have any clear idea as to why man has surpassed the other animals. Monkeys are dominated by a master passion for monkeying—by an avid curiosity. Man possessed this to a greater degree

than the other monkeys, and he has, therefore, outdistanced his simian relatives. Many basic human traits, such as moodiness, temperamentality, vacillation, changeability, and the like are basically simian traits. Only an understanding of the supreme interest of the simians in chatter can explain many of the more enduring and popular human diversions. When we comprehend that we are big monkeys, only then we can understand without humiliation why people love Walter Winchell and the Mirror, why Babe Ruth is more interesting than Einstein, the popularity of crooners and clowns on the radio, and why Mickey Mouse is the most popular movie actor. Problems of economics, government, law, ethics and the like would be vastly illuminated by a comprehension of our simian nature. And if we viewed our neighbors and ourselves as big monkeys, trying to do our best under the limitations imposed by our simian heritage, we would not only have vastly more understanding of human behavior and its frailties, but would also be far more full of understanding, tolerance, patience, and, perhaps, hopefulness. The writing of such a book as would explain the multifarious significance of our simian background would render an incredible service to humanity. It would fulfill the promise of the Darwinian "hunch" and be of greater practical significance than all the other Darwinian literature combined. It is a task that might well intrigue H. G. Wells and brilliantly cap a career

already distinguished for its devotion to indicating the bearing of science upon human well-being.

While, as has been said, practically all biologists believe in evolution, the greater part of them are at present more concerned in studying the structure and the workings of present-day creatures which are already at hand in inexhaustible quantities. Fossil remains are very imperfect, although it has been possible to classify them into many families, genera, and species.

Without the modern compound microscope, which began to be improved about 1830 and reached a high degree of perfection in the latter half of the nineteenth century, our knowledge of the world of plant and animal life would remain slight. To illustrate this take a small pin and make a shallow indentation in a piece of paper. The spot will be about a hundredth of an inch in diameter. Now the overwhelming majority of animals and thousands of different kinds of plants are smaller, often much smaller, than the mark of the pin. The cells of which multicellular animals are formed are also less than a hundredth of an inch across, including the cell from which we all start. With the microscope a creature a hundredth of an inch in length can be studied as if he were a foot long, if one has lenses magnifying twelve hundred diameters, and these are common enough in any good laboratory.

About 1838 two German naturalists, Schleiden and

Schwann, one of whom had been studying plants, and the other studying animals, compared their observations and reached the conclusion that all living things are composed of one or many minute bodies which are called cells-a somewhat misleading name. For organic cells are not like those in a honeycomb or in a prison or in a monastery, but are minute masses of a gelatinous substance to which the botanist Von Mohl gave the name of protoplasm in 1846. All life, whether plant or animal, was shown to have its beginning in a tiny mass of protoplasm, and the old theory that simple organisms generated spontaneously from dead matter was finally shown to be a mistake. As Virchow, the famous German physiologist, expressed it, only a live cell can produce another live cell (omnis cellula e cellula). The cell corresponds in a certain way with the molecules which make up inanimate substances.

The chemical elements of protoplasm are known, but, to judge from the miracles it performs, its still unknown structure and organization are complex beyond belief. There are a vast number of creatures, most of which live in the water, which consist of but one cell; but the microscope, although it reveals but few of their intimate secrets, shows them to be very complicated. These singlecelled creatures are called protozoans, and they are not always very sharply differentiated from single-celled plants, since the animal and plant kingdoms merge into one another in their simpler forms.

All the forms of animal life we see about us-fishes, insects, birds, mammals-are composed of millions of cells. It is estimated that the human body contains many trillions, each of which is due to the division of a previous cell, and all of which spring, in the last analysis, from a single original cell (the ovum, or egg), in the same way that all multicellular animals and plants take their start. In addition to the cells which form the skin, muscles, bones, and organs, the blood of vertebrates contains billions of cells (corpuscles, red and white), which circulate freely and act somewhat like protozoans, or unicellular animals.

Only two illustrations of the great importance of the microscopic study of cells need be mentioned here: (1) the investigations relating to the embryonic cell and its development into a full-grown creature, and (2) the discovery of bacteria and other single-celled and very minute creatures which play a great rôle in man's life in both health and disease.

VII

While living creatures were yielding some of their well-kept secrets to scientific investigators, those who busied themselves with what used to be called inert matter were discovering that its constituent parts are in a state of marvelous activity. Matter may be inanimate (which means "soulless"), but it is anything but inert. Familiar things like heat, light, and electrical currents are to be explained only by the incredible mobility of matter.

The notion that all things consisted of minute, indivisible particles, atoms, had been suggested in ancient Greece by Democritus, a contemporary of Socrates. The idea was taken up by the Epicureans and was later set forth, in the days of Cicero and Julius Cæsar, by a Roman poet, Lucretius, in his work, On the Nature of Things. This older theory can hardly be regarded as more than a shrewd guess, very illy supported by any experiments then possible.

Early in the nineteenth century an English chemist, Dalton, was led to revive the idea as a result of his careful consideration of the fixed proportions which entered into any chemical compound. He thought that all matter acted as if it were composed of atoms of the various elements, and that these always combined in definite numbers to form the molecules, or least particles, of the innumerable compound substances. For example, he rightly guessed that an atom of carbon entered into combination with two atoms of oxygen to form what used to be called carbonic acid and is now called carbon dioxide. Moreover, as twelve parts by weight of carbon always combined with thirty-two parts of oxygen, he thought it might be inferred that the carbon atom weighed twelve

units and the oxygen atom sixteen. This formed the basis of the modern atomic theory, which, after being very carefully worked out in relation to gases as well as solids by a long succession of celebrated chemists, has become the foundation of our conception of matter today.

For a good while the chemists believed the atom to be the smallest particle of matter of whose existence there was any evidence. They decided that theoretically there could be but ninety-two kinds of atoms (called elements), such as hydrogen, oxygen, carbon, nitrogen, calcium, silicon, sulphur, silver, gold, mercury, lead, and so on. With two or three dubious exceptions, these ninetytwo have now all been discovered. Hydrogen is the lightest atom; uranium, the heaviest.

At the very end of the nineteenth century it began to become apparent to chemists that atoms were not simple, but very complex, and during the first third of the twentieth century the most revolutionary discoveries were made. The ways in which physicists and chemists reach their conclusions are too complicated to be described here. The existence of "rays," beginning with X-rays, to which Röntgen called attention in 1895, is one element in the situation. The X-ray readily passes through substances which are opaque to light rays. Then in 1897 Monsieur and Madame Curie discovered radium and found that it, together with uranium and certain other very heavy atoms, emitted rays or particles which were not atoms, but small parts of atoms. With subtle electrical devices and the spectroscope the analysis of the atom is progressing.

As atoms are now understood by physicists and chemists they are constructed each like a miniature solar system with a central body, the nucleus, around which revolve satellites called electrons. The electrons are negative charges of electricity attracted and held in their orbits by the nucleus, which contains positive charges, called protons. Hydrogen, the simplest atom and the lightest, has but one electron (as the earth has but one moon), which circulates about its center. Uranium, the heaviest known atom has at least ninety-two electrons and is so complicated that some of its electrons break away from time to time, as is the case with the very heavy and insecure radium atom. It is supposed that the hydrogen electron is relatively as far from its nucleus as the earth is from the sun; but it whizzes about its nucleus at a rate of something like fourteen hundred miles a second, whereas the earth trundles around the sun at about eighteen miles a second.³

If these general conclusions in regard to the constitution of matter are correct, it is to be noted that however quiet a mass of iron or stone may seem to us, its minute parts are electrical charges, negative and positive, in a

⁸I have illustrated this by reference to Bohr's theory of the atom. I am not unaware of the contending and variant doctrines of the nature of the atom as suggested by Schroedinger, De Broglie and others.

state of incredible activity. Compact as iron and stone appear to the human hand, they are almost entirely emptiness—empty as the universe at large. Professor Eddington says, indeed, that "the revelation by modern physics of the void within the atom is more disturbing than the revelation by astronomy of the immense void of interstellar space." He explains that "if we eliminated all the unfilled space in a man's body and collected his protons and electrons into one mass, the man would be reduced to a speck just visible with a magnifying glass."

By juggling about the atoms so as to reproduce old kinds of molecules and create new ones, modern chemists engage in magical feats outrunning all the dreams of the alchemists. Substances such as alcohol, indigo, and various dyes and perfumes, which were formerly derived only from plants and animals, can now be made in the laboratory. Steel can be improved by adding certain atoms of other elements, and the soil can be rendered more fertile by rectifying its constituents. The most striking achievements have been accomplished in the utilization of coal tar. This contains a great number of complicated and valuable molecules, which have been turned into a multitude of dyes, perfumes, and medicines. A coal-tar product may be used to scent a handkerchief, to flavor a dish, to pull a tooth painlessly, or to construct a phonograph record. So the chemist is becom-

ing more and more essential to manufacturers, mineowners, farmers, health officers, and the public in general. This is because he has learned what substances are made of, and how to recombine their constituents so as to meet human needs and desires.

VIII

Natural science deals with man's surroundings—the world in which he lives, and the animals and plants which share the earth with him. Since he has to make terms with his environment and—so far as he may to his own advantage—control it, his increasing knowledge of the ways of nature is one of incalculable importance to him. Moreover, the attitude of mind of geologists, paleontologists, chemists, and biologists, who have been successful in revealing the secrets of natural processes, has suggested new and more fruitful ways of investigating man himself.

In the first place, the student of non-human phenomena disclaims and has long disclaimed, any confidence in merely traditional beliefs handed down in old books. He is not pledged to cling to any doctrines in his field of work just because they have long been accepted. He is at liberty to doubt or completely to reject the faith of the past in cases where it does not seem to fit the facts that he observes. He is always asking how, upon careful examination, things really are and how they really work, not how good men in the past have taught that they are. There is no place in science for dogma.

In the second place, it has become clear that there is no better way of understanding things and seeing how they really are and how they work than by going back and studying how they have come about. This is called the genetic, or developmental, approach to truth. By learning how animals once were, it becomes far easier to see not only how they came to be as they are, but how they really are. For example, the examination of more primitive hearts and brains than those of the mammals serves to call attention to peculiarities in the higher animals which might otherwise be overlooked. The existence in man of vestigial muscles for moving his ears and wagging a tail can only be understood historically. The arrangement of his intestines and the weakness of his lower abdominal muscles-which often invite diseasetake on a new aspect when one considers that his remote ancestors went on all fours. Moreover, embryology, or the history of individual development, has served to suggest explanations for important facts that were previously obscure.

Thirdly, the scientist constantly resorts to the comparative method. He collates, or lays side by side, so to speak, all sorts of animals and plants in order to note their resemblances and differences. He finds correspondences hidden under seeming diversity, differences dis-

guised as resemblances, and curious methods of reaching the same essential ends in multitudinous ways. The pineapple and the so-called "moss" that hangs from trees in the South are nearly related; the wings of a bird and the forelegs of a frog are morphologically akin. On the other hand, objects which look alike to the casual observer often prove to be very different. What he takes for petals when he sees the brilliant poinsettia are really bracts; a sunflower or a daisy is not one flower, but many.

Lastly, careful experimentation and "control" bring out a vast amount of information which would escape one who confined himself to observing merely what happened to happen when he was looking on. By arranging special conditions under which to watch occurrences the scientist places himself in a position the better to judge causes and effects. For example, he makes lightning in his laboratory instead of waiting for a thunderstorm; or he devises methods of producing tremendous pressure to see its effects on marble, instead of merely conjecturing the probable influence of geological pressure.

Man is at once the most important and the most difficult subject of scientific study. He has much in common with other animals; the chemist and biologist can tell us a great deal of ourselves, as has been indicated. But he is also a creature with the possibility of building up a mind and greatly altering his behavior; an animal subject to the

most obscure emotional states and fluctuations resulting from his multiform memories, his dependence on others, his ideals, and his urgent longings for love, power, and honor, his hidden fears and resentments-all of which perplex and frustrate those who try to explain his ways and thoughts scientifically. He combines all the chemical and organic problems of other forms of life with the mysteries of a consciously planning and conspiring creature persistently operating under misapprehensions about himself and others and in regard to his surroundings. He wants what he doesn't want; he doesn't want what he wants. As the Latin poet put it, Volo nolo, nolo volo. A history could be written of the analysis of human misery and perversity from Buddha, Euripides, Koheleth (Ecclesiastes), Lucretius, and Seneca down to Schopenhauer and Von Hartmann; also of the various plans for deliverance or salvation recommended by each. But here we have had no space to do more than suggest the influence which modern scientific methods have had upon the general conceptions of man's origin, nature, and problems. In the following chapter we shall consider the manner in which science has helped to revolutionize our everyday life and to create a veritable new world out of our material surroundings.

CHAPTER VIII

ENTERING THE AGE OF PLENTY

WHILE our information in regard to man and the world is incalculably greater than that available a hundred, even fifty years ago, we must frankly admit that the knowledge is still so novel, so imperfectly assimilated, so inadequately coördinated, and so feebly and ineffectively presented to the great mass of men, that its direct effects upon human impulses and reasoning and outlook are as yet inconsiderable and disappointing. We might think in terms of molecules and atoms, but we rarely do. Few have any more knowledge of their own bodily operations than had their grandparents. The farmer's confidence in the phases of the moon gives way but slowly before recent discoveries in regard to the bacteria of the soil. Few who use the telephone, ride on electric cars, and carry a camera have even the mildest curiosity in regard to how these things work. It is only indirectly, through invention, that scientific knowledge touches our lives on every hand, modifying our environment, altering our daily habits, dislocating the anciently established order, and imposing the burden of constant adaptation on even the most ignorant and lethargic.

ENTERING THE AGE OF PLENTY

Unlike a great part of man's earlier thought, modern scientific knowledge and theory have not remained a matter merely for academic discourse and learned books, but have provoked the invention of innumerable practical devices which surround us on every hand, and from which we can now scarce escape by land or sea. Thus while scientific knowledge has not greatly affected the thoughts of most of us, its influence in the promotion of modern invention has served to place us in a new setting or environment, the novel features of which it would be no small task to explain to one's great-great-grandfather, should he unexpectedly apply for up-to-date information. So even if modern scientific knowledge is as yet so imperfect and ill understood as to make it impossible for us to apply much of it directly and personally in our daily conduct, we nevertheless cannot neglect the urgent effects of scientific inventions, for they are constantly posing new problems of adjustment to us, and sometimes disposing of old ones.

Let us recall a few familiar but none the less important examples of the astonishing way in which what seemed in the beginning to be rather trivial inventions and devices have, with the improvements of modern science, profoundly altered the conditions of life.

Some centuries before the time of Bacon and Galileo four discoveries were made which, supplemented and

elaborated by later insight and ingenuity, may be said to underlie our modern civilization. A writer of the time of Henry II of England reports that sailors when caught in fog or darkness were wont to touch a needle to a bit of magnetic iron. The needle would then, it had been found, whirl around in a circle and come to rest pointing north. On this tiny index the vast extension of modern commerce and imperialism rests.

That lentil-shaped bits of glass would magnify objects was known before the end of the thirteenth century, and from that little fact have come microscopes, telescopes, spectroscopes, and cameras; and from these in turn has come a great part of our present knowledge of natural processes in men, animals, and plants and our comprehension of the cosmos at large.

Gunpowder began to be used a few decades after the lens was discovered; it and its terrible descendants have changed the whole problem of human warfare and of the public defense.

The printing-press, originally a homely scheme for saving the labor of the copyist, has not only made modern democracy and nationality possible, but has helped by the extension of education to undermine the ancient foundations upon which human industry has rested from the beginnings of civilization.

In the middle of the eighteenth century the steam engine began to supplant the muscular power of men and

animals, which had theretofore been only feebly supplemented by windmills and water-wheels. And now we use steam and gas engines and water power to generate potent electric currents which do their work far from the source of supply. Mechanical ingenuity has utilized all this undreamed-of energy in innumerable novel ways for producing old and new commodities in tremendous quantities and distributing them with incredible rapidity throughout the earth.

Vast factories have sprung up, with their laborious multitudes engaged on minute contributions to the finished article; overgrown cities sprawl over the neighboring green fields and pastures; long freight trains of steel cars thunder across continents; monstrous masses of wealth pile up, are reinvested, and applied to making the whole system more and more inconceivably intricate and interdependent; and incidentally there is hurry and worry and discontent and hazard beyond belief for a creature who has to grasp it all and control it all with a mind reared on that of an animal, a child, and a savage.

As if these changes were not astounding enough, now has come the chemist who devotes himself to making not new *commodities* (or old ones in new ways), but new *substances*. He juggles, as we noted in the preceding chapter, with the atoms of carbon, hydrogen, oxygen, nitrogen, chlorine, and the rest, and far outruns the workings of nature. Up to date he has been able to produce artfully over two hundred thousand compounds, for some of which mankind formerly depended on the alchemy of animals and plants. He can make foodstuffs out of sewage; he can entrap the nitrogen in the air and use it to raise wheat to feed, or high explosives to slaughter, his fellows. He no longer relies on plants and animals for dyes and perfumes. In short, a chemical discovery may at any moment devastate an immemorial industry and leave both capital and labor in the lurch. The day may not be far distant when, should the chemist learn to control the incredible interatomic energy, or penetrate the secret of photosynthesis, carried on by the green leaf, the steam engine will seem as complete an anachronism as the treadmill.

The uttermost parts of the earth have been visited by Europeans, and commerce has brought all races of the globe into close touch. We have now to reckon with every nation under heaven, as was shown in the World War. At the same time steam and electrical communication have been so perfected that space has been practically annihilated as regards speech, and in matters of transportation reduced to perhaps a fifth. So all the peoples of the earth form economically a loose and, as yet, scarcely acknowledged federation of men, in which the fate of any member may affect the affairs of all the others, no matter how remote they may be geographically.

All these unprecedented conditions have conspired to give business for business' sake a fascination and overwhelming importance it has never had before. We no longer make things for the sake of making them, but for money. The chair is not made to sit on, but for profit; the soap is no longer prepared for purposes of cleanliness, but to be sold for profit. Practically nothing catches our eye in the way of writing that was written for its own sake and not for money. Our magazines and newspapers are our modern commercial travelers proclaiming the gospel of business competition. Formerly the laboring classes worked because they were slaves, or because they were defenseless and could not escape from thraldom-or, mayhap, because they were natural artisans; but now they are coming into a position where they can combine and bargain and enter into business competition with their employers. Like their employers, they are learning to give as little as possible for as much as possible. This is good business; and the employer should realize that at last he has succeeded in teaching his employees to be strictly business-like. When houses were built to live in, and wheat and cattle grown to eat, these essential industries took care of themselves. But now that profit is the motive for building houses and raising grain, if the promised returns are greater from manufacturing automobiles or embroidered lingerie, one is tempted to ask if there are any longer compelling reasons for building houses, or raising food?

Along with the new inventions and discoveries and our inordinately pervasive commerce have come two other novel elements in our environment—what we vaguely call "democracy" and "nationality." These also are to be traced to applied science and mechanical contrivances.

The printing-press has made popular education possible, and it is our aspiration to have every boy and girl learn to read and write—an ideal that the Western World has gone far to realize in the last hundred years. General education, introduced first among men and then extended to women, has made plausible the contention that all adults should have a vote, and thereby exercise some ostensible influence in the choice of public officials and in the direction of the policy of the government.

Until recently the mass of the people have not been invited to turn their attention to public affairs, which have been left in the control of the richer classes and their representatives and agents, the statesmen or politicians. Doubtless our crowded cities have contributed to a growing sense of the importance of the common man, for all must now share the public conveyance, the water supply, and contagious diseases.

But there is a still more fundamental discovery under-

lying our democratic tendencies. This is the easily demonstrated scientific truth that nearly all men and women, whatever their social and economic status, may have much greater possibilities of activity and thought and emotion than they exhibit in the particular conditions in which they happen to be placed; that in all ranks may be found evidence of unrealized capacity; that we are living on a far lower scale of intelligent conduct and rational enjoyment than is necessary.

Our present conceptions of nationality are of very recent origin, going back scarcely a hundred years. Formerly nations were made up of the subjects of this or that gracious majesty and were regarded by their God-given rulers as beasts of burden or slaves or, in more amiable moods, as children. The same forces that have given rise to modern democracy have made it possible for vast groups of people, such as make up the British Empire, France, or the United States, to be held together more intimately than ever before by the news which reaches them daily of the enterprises of their government and the deeds of their conspicuous fellow-countrymen.

In this way the inhabitants of an extensive territory embracing hundreds of thousands of square miles are brought as close together as the people of Athens in former days. Man is surely a gregarious animal who dislikes solitude. He is, moreover, given to the most exag-

gerated estimate of his tribe; and on these ancient foundations modern nationality has been built up by means of the printing-press, the telegraph, and cheap postage. So it has fallen out that just when the world was becoming effectively cosmopolitan in its economic interdependence, its scientific research, and its exchange of books and art, the ancient tribal insolence has been developed on a stupendous scale. These matters we shall consider more thoroughly in later chapters.

The manner in which man has revolutionized his environment, habits of conduct, and purposes of life by inventions is perhaps the most astonishing thing in human history. It is an obscure and hitherto rather neglected subject. But it is clear enough, from the little that has been said here, that since the Middle Ages, and especially in the past hundred years, science has so hastened the process of change that it becomes increasingly difficult for man's common run of thinking to keep pace with the radical alterations in his actual practices and conditions of living.

We may now profitably turn to a brief review of the manner in which man has gradually conquered nature and made his material life more abundant and secure, until today he has a vision of what may truly be regarded as a potential age of plenty. Only archaic and oppressive social institutions hold him back from entrance into this promised land of economic abundance.

11

We might begin with the well-known fact that man is by no means the only artisan in our world. Without his tools, he would be unable to compete with the spider, the bee, or the wasp. Certain birds construct very elaborate dwellings for themselves and their families, but man's ancestors, to judge from his nearest relatives which exist today, could do no more than make a rude platform of boughs. When our distant forbears began to walk firmly on their hind legs and thus found their hands free, then it was that their good, big brains began to undergo those changes that make them so superior to those of the highest apes. In this long process we may assume that two factors have been specially potent in developing the peculiarly human heritage of culture, as distinguished from the instinctive and often marvelous skill of other animals: these are language and the invention of tools.

In the beginning, man was a far more clumsy and inefficient artisan than the wasp; but he had the great advantage, if he happened to be particularly clever, of being able, not only to do something from time to time that his ancestors had never done, but to transmit this improvement to succeeding generations. How the wasp developed its skill we do not know; but, as it now is, so it remains—it neither increases nor declines, as does human culture, for the simple reason that it does not have to be taught to each generation by the last. Could we imagine a child today growing up absolutely untaught and unaffected by the example of those around him, he would, in all probability, be little superior in point of civilization to a baboon. In short, our achievements are not innate-we owe practically all of them to past generations. The accumulation of culture and its transmission by education in the widest sense of the word is the chief distinction and duty of our species. A great part of our development, and a great part of the heritage that has been transmitted to us from age to age, is associated with our implements. By his tools man can be traced back through hundreds of thousands of years. Indeed, only the stones and bits of bone that he modified to his uses survive from the very remote periods. The French anthropologists have established a succession of eras in the history of the old stone men, based on the variety and finish of their implements. The history of man, then, begins with his industries; and I am not sure that his industries, in a broad sense of the term, have not always constituted as good a single test of his general civilization and as satisfactory a clue to its vicissitudes as can be found.

After the last advance of the ice sheet in Europe, and perhaps not more than ten to twenty thousand years ago, the so-called "neolithic" phase of civilization clearly emerged, with its ground stone implements, its pottery,

agriculture, and domestic animals. This stage, before the gradual introduction of metals, seems to have prevailed very generally in both the Old World and the New. It lies back of the civilization of Egypt and Babylonia; it was the condition in which the Europeans found the peoples of America four centuries ago; and it may still be studied in various parts of the earth where it continues to exist.

The recent discoveries in Egypt indicate that some four thousand years before Christ a marked advance beyond the neolithic age had already taken place there. A rapid and graceful system of writing had been developed, copper was beginning to be used for vessels, and, when properly hardened, it became available for tools. The ancient Egyptian seems to have been an ever industrious and practical person, to whom business made a strong appeal. The bookkeeper is a conspicuous figure in the paintings which have come down to us. The Egyptians' art was closely associated with his peculiar environment and his industries. As Breasted has well said: "The lotus blossomed on the handle of his spoon, and his wine sparkled in the deep-blue calix of the same flower; the muscular limb of the ox in carved ivory upheld the couch on which he slept; the ceiling overhead was a starry heaven resting on palm-trunk columns, each crowned with its graceful tuft of drooping foliage."

The range of Greek manufactures can also easily be

brought into instructive relation with both their art and their conceptions of life, in such a way as to give a far more adequate notion of this extraordinary people than one is likely to derive from the text-books that tell of their political assemblies and constant wars. We still have many examples of their lovely vases and cups and platters, their bracelets, earrings, and mirrors. We can form an excellent idea of their furniture as well as of their temples and theaters.

While the Greeks prized beautiful things as no other people before them, so far as we know, manual labor was viewed with contempt by the leisure class. This could not be otherwise at a time when a great many industrial operations were carried on by slaves, a class constantly recruited by captives, and sufficiently large to manufacture most necessary commodities. Aristotle, in a famous chapter of his Politics, declares slavery to be in accordance with nature, since there is always a considerable class of persons fit for nothing else; although he admits that many become slaves through ill fortune who ought properly to be free, and that many others are free who have all the natural traits of slaves. The higher branches of science did not aim at usefulness, and owed their dignity to that fact. They could only be carried on by those who did not use their hands and who devoted themselves to a leisurely, contemplative life. Seneca repudiates with warmth the idea that the practical arts

were invented by men of exceptional genius. He declares that, on the contrary, they are vulgar devices of the lowest of humanity, and should be left to slaves. Moreover, Aristotle, in his *Metaphysics*, speaks as if all possible practical inventions had long ago been made. So the philosophers and the institution of slavery combined in ancient Greece to discredit industry. Thus it came about that the use of one's hands and head in making of useful articles was condemned as degrading; and the more completely one could free himself from such useful employment, the more prospect he had of rising to the full dignity of a man and a philosopher.

The Romans took over the Greek industries that suited their purposes, and these were transmitted to medieval Europe, with such modifications as change of taste and alterations of the general habits of life called for. The growth of the towns in the twelfth century was accompanied by interesting developments of craft guilds, and the master workmen in the various trades began to play a far more important and dignified rôle in public affairs than ever before. Moreover, the common artisan ceased to be a slave, or even a serf, so that one of the gravest disadvantages attaching to manual labor in Greece and Rome disappeared in western Europe five or six centuries ago. The beginning of this rehabilitation of industry is perhaps reflected in the prevalence of surnames derived from homely occupations. The time came when no one was ashamed to be called Taylor, Turner, Weaver, Smith, Fuller, Cooper, Brewster, Hooper, Chandler, Fletcher, Potter, Horner, or Currier.

From the thirteenth century on, there began to be premonitions that industry might sometime be revolutionized by new discoveries. A method of melting iron was discovered, for instance, so that it could be cast, instead of forged, after merely softening, as previously. The alchemist, in his search for an elixir which would turn copper into gold, and lead into silver, and prolong life indefinitely, came upon hitherto unsuspected properties in the substances he experimented with, and so laid the foundations for what was to become applied chemistry. Yet no very striking changes in industry occurred before the eighteenth century. In the days of Louis XIV, when inventors were already becoming rather common, the people of western Europe continued to spin and weave with very simple devices. Merchandise was still carried about on slow carts, and letters were as long in getting from London to Rome as in the time of Constantine.

But two great truths were gradually dawning on the more thoughtful. One was the importance of the seemingly homely, common, and inconspicuous things about them; the other was the possibility of making use of our knowledge of common things to promote the general welfare. Neither the ancient nor the medieval thinkers

had paid much attention to the material world. They withdrew themselves from nature, and, as Francis Bacon said, they "tumbled up and down in their own reason and conceits," and sought the truth in their own little heads and not in the great common world about them. When men of the first-rate ability turned from a consideration of the good, the true, and the beautiful, and of the precise relation of the three members of the Trinity to one another, and began to wonder what makes milk sour quicker in hot weather than in cool, and why an object seen through a glass bottle is magnified, they had already made the transitions from the old to the new attitude of mind.

Patient observation, experimentation, and calculation, in the spirit of modern research, did not begin to be carried on in Europe, on a large scale, before the opening of the seventeenth century; and since that time the progress in accumulating knowledge in applying it to the relief of man's estate has been absolutely without precedent in the history of the globe. The story of modern invention and of its revolutionary effects on our life and our ideals of progress cannot be even sketched out here. But it is infinitely more absorbing and vital than the record of kings, conquests, and treaties, and of the deliberations and decrees of public assemblies, which have so long been regarded as constituting orthodox history.

Moreover, what child could fail to follow eagerly, if

the matter were but clearly put to him, the marvelous doings of the machine, which has shown itself far more potent to alter man's ways than all the edicts of all the kings and parliaments that have ever existed.

In a broad way the revolution that produced the majestic "empire of machines" consisted primarily in the transition from a handicraft to a machine technique. It is doubtful if there has ever been any other transformation in the history of humanity so revolutionary in its results as that which was embodied in the abandonment of the tool economy and the entry of man into the machine age. Instead of continuing to utilize a tool to assist him in his own physical efforts, man has become able to harness nature and to adapt it to his own uses through the medium of an iron slave which can be set to work for him with only general external supervision. In the place of levers, scrapers, chisels, spinning-wheels, hand-manipulated shuttles, the bellows and crude forge, and other forms of tools which he had gradually fashioned from the early stone age onward, man has devised the most complicated and efficient types of machinery to carry on every manufacturing process known in the eighteenth century, as well as a vast number of new ones which modern science and technology have suggested.

It was natural that the first great series of mechanical inventions should have come in the textile industry, for this was the basis of English economic life in the eight-

eenth century. Between 1733 and 1825 mechanical methods of spinning and weaving had been successfully devised and practically applied. These rendered necessary new types of power for driving the machinery. Water power, which had been utilized by man since primitive times, was adequate where it could be found, but it was not available to the degree essential to carrying on the new manufacturing processes. Hence it was quickly supplemented by the steam engine. The steam engine had been invented as a sort of scientific toy in the Greek period, and in the form of a steam-generated atmosphere engine had been in use in the early part of the eighteenth century for the purpose of pumping water out of mines. It remained for James Watt, following 1760, to invent the true steam engine and thus to provide the basic type of power used in modern industry and transportation for over a century after Watt's time. Then it was challenged by the steam turbine and the electric motor.

The new machines and the new engines required stronger building material than wood and cheaper substances than the iron and steel made by the crude and expensive processes of the early eighteenth century. This led to the invention of the modern methods of making iron and steel, associated with the names of Cort, Bessemer, Siemens, Gilchrist, and Krupp. These in turn in-

volved great improvements in the technique of mining coal and iron ore.

The need for a greater volume and a wider diversity of raw materials, together with the vast increase of finished products brought about by the new machinery driven by the steam engine, made necessary the provision of extensive improvements in the methods of transportation. Better roads were built by Telford, Macadam, and others early in the nineteenth century. To these first advances has been added subsequent progress in the making of asphalt and concrete highways. A great network of canals followed the initial activities of the Duke of Bridgewater and his chief engineer, James Brindley, in England. The steam locomotive was applied to the tramway, and there thus developed the modern railroad and steam transportation on land. Rumsey, Fitch, Symington, Fulton, and others successfully applied the steam engine to water navigation through the invention of the steamboat. The new methods of iron and steel manufacturing soon made possible greatly improved types of ocean-going boats. The screw propeller invented by Ericsson greatly increased the efficiency of the steamboat.

In recent years the old-fashioned condensing engine has been supplanted by the turbine, and there is also a definite tendency to substitute for the steam engine some sort of internal-combustion engine or the electric motor.

The internal-combustion engine has also led to the development of the automobile and the airplane, the two most recent and striking aspects of the improvement in the technique of transportation. The most impressive aspect of the progress in regard to power in recent years has been that associated with the long-distance transmission of power over high-tension electric wires, and the growth of "super-power" plants and projects. This may well foreshadow another industrial revolution quite as novel and much more far-reaching than that which accompanied the appearance of the steam engine. The development of the railroad and the steamboat made necessary some form of transmitting information which would travel more rapidly than either. This produced the telegraph, the ocean cables, the telephone, the wireless telegraph, and more recently the wireless telephone, or the radio, as it is popularly known.

These devices for the rapid transmission of information have made it feasible to send messages speedily from all parts of the earth to a given point, and have greatly extended the volume and variety of news which might be disseminated through the newspapers. The improved methods of printing embodied in the rotary printingpress and the new type-setting machinery have made it practicable to utilize this news in a speedy and efficient fashion. There was thus born the modern daily newspaper, which gives to the average citizen a greater vol-

ume and a wider range of information concerning the events of the world in a single week than his great-grandfather could expect to obtain in his entire lifetime. The application of the railroad and motor trucking to the distribution of mail has enabled us to distribute these daily papers in an effective and expeditious manner.

Many of the processes of modern industrial life, such as subway transportation, open-air transportation by night, mining, and the operation of factories on dark days and at night, require for their very existence a much cheaper and more adequate method of illumination than the candles or the sperm-oil lamps which were in use in the latter half of the eighteenth century. Such new and improved methods of illumination have been provided through the kerosene-lamp, the gaslight, the electric arc-light, and the incandescent electric light, the latter of which has undergone many important alterations and improvements since first devised over a halfcentury ago.

One must not overlook the enormous significance of modern chemistry in producing synthetic compounds, utilizing by-products, and providing cheaper and better types of dyestuffs. Modern chemistry also underlies the remarkable development of the modern petroleum industry, which makes possible the operation of the internalcombustion engines. In the same way that the earlier aspects of the Industrial Revolution were known as the

iron and steel age, so now many have come to designate the present era as the "oil age." Likewise, modern chemistry brought into existence the practicable methods of preparing raw rubber for commercial uses, particularly in connection with bicycle tires, automobile tires, rubber clothing, and hygienic devices.

While describing the remarkable revolution in the technique of manufacturing and transportation it must not be forgotten that a striking transformation has also taken place in the technological basis of modern agriculture. The mechanical technique has likewise been applied here, and in the methods employed on the great wheat ranches of the western United States and Canada, for example, we have what practically amounts to a machine system outside of factory walls. Even the already impressive technique of large-scale farming of twenty years ago has been outdistanced through the application of the internal-combustion engine, in the form of the farm tractor, to agricultural purposes. The application of chemistry to agriculture has been relatively as important as its intervention in the newer processes of manufacture. By making possible the chemical analysis of the soil, modern chemistry has put fertilization upon a scientific basis. Mention should also be made of the application of modern engineering principles and achievements to agriculture in the great irrigation and reclama-

tion projects which have been executed in various parts of the world.

Perhaps the best conclusion which we could have to this section on the technological changes, which constituted one phase of the Industrial Revolution and initiated many resulting aspects of this great transformation, would be a brief comment upon the spirit of invention and on the relation of inventions to modern civilization. As Gabriel Tarde pointed out in his brilliant system of social philosophy, inventions are the chief source of innovations in modern culture. Only by inventions can culture be changed in any very fundamental way. In addition to local inventions there is the borrowing by one group of the inventions which another group has earlier produced. Above all, the spirit of invention is a denial of the attitudes and processes of primitive and medieval repetition and stability.

Inventions were few and relatively infrequent down to the middle of the eighteenth century. In fact, the condition of technology was relatively static for thousands of years prior to 1750. At the present time, inventions come rapidly and in great numbers. A single year often witnesses a number far in excess of those produced in a thousand years previous to 1750. Even such inventions as the airplane or the wireless telephone, which would have been regarded as nothing short of miraculous a century ago, are now complacently or nonchalantly re-

ceived. We have now become so adjusted to the everyday occurrence of notable scientific and mechanical achievements that only the most striking inventions attract our attention at all.

Furthermore, with the progress of modern technology, inventions are no longer the chance product of a unique genius, but are becoming more and more the natural result of scientific research and experimentation. Given a need for a definite invention, such an invention is wellnigh inevitable, as Professor Ogburn and others have amply proved by citing numerous inventions arrived at independently and almost synchronously by a number of different inventors. At the present time, the limitations upon inventions are pecuniary rather than scientific. It is not so much a question whether an invention is possible as whether it will pay to produce and market it.

Finally, it may be pointed out that, with the increased number and rapidity of modern inventions, contemporary civilization has assumed a dynamic character quite foreign to that of any earlier age. The chief danger in this situation is to be found in the possibility that in creating this wonderful technical equipment, mankind will not be able to carry out with sufficient rapidity the essential readjustments of social and economic institutions which are necessary to handle successfully the new technical equipment. There is grave risk that modern scientists and inventors have created a Frankenstein mon-

ster, quite capable of destroying modern civilization. Will Irwin and others have shown that there is a special danger in the growing efficiency of the engines of destruction utilized in modern warfare. Indeed, it is highly probable, unless we are able to avert future wars, that modern technology will be little more than an instrument for collective human suicide. At the same time, modern technology has put at the disposal of man a potential mechanism for increasing human welfare and comforts to a far greater degree than anything which has earlier been devised through the ingenuity of man. The future alone can determine whether or not humanity can be safely intrusted with this new machinery.

The mechanical technique and the factory system not only brought about remarkable changes in the economic organization of society and in the trade policies of the leading states, but also wrought tremendous alterations in the general social conditions which have prevailed in the contemporary era. Perhaps the most notable of these social changes was the rise of factory towns and the development of urban civilization. One reads much of large historic cities in the period of Oriental and classical history, and many of the towns of the Middle Ages possessed much historic significance because of their artistic or other cultural and educational associations. This has led many to believe that the urban civilization which we now know has been fairly characteristic of human

society for thousands of years. As a matter of fact, well down into the nineteenth century the great majority of mankind, even in the Western World, dwelt in rural regions.

City life on the part of the majority of the population is a novelty, the results of which cannot as yet be foreseen. Athens probably never had a population much over 100,000, and the average population of Rome was about half a million. The population of London in 1800 was only 864,000; that of Paris, 547,000; and that of Berlin, 172,000. In 1801 in England there were only fifteen cities having a population of over 20,000, the total population of these fifteen cities being about 1,500,000. In 1891 there were one hundred eighty-five cities in England with a population of over 20,000 and the combined population of these cities was over 15,500,000. These figures are but characteristic of the changed situation throughout the western industrial states. Certain it is that city life has subjected mankind to a new set of circumstances and experiences for which he has been but very imperfectly prepared by his experiences in the past.

The modern industrial city was an inevitable product of the factory system. The guild system might well exist in small towns, and the domestic, or putting-out, system could be easily harmonized with the scattering of the industrial population throughout the countryside. The factory system, however, required the concentration of workers in a region adjacent to the factories. Particularly was this true in the period of the development of the factory during the eighteenth century and the first part of the nineteenth century. At that time the working-day was excessively long, running, all too frequently, to sixteen and eighteen hours, and the methods of transportation, which now carry the worker to and from suburban areas, were unknown. Those who worked in the factories had to dwell in a place not far removed from the factory itself. Just in proportion as any state has been affected by the Industrial Revolution, and has introduced modern industry and commerce, so it has passed from an agrarian to an urban condition. In the more advanced industrial states, such as England, Belgium, and Germany, a majority of the population dwells within cities. The same is becoming true of the industrial part of the United States; namely, that located east of the Mississippi River and north of the Mason-Dixon line.

Not only has there been a notable shift of population from the country to the town, but there has also been a general movement away from the older areas of settlement, based chiefly upon agricultural opportunities, to those which afford the industrial advantages of modern manufacturing. In general, population has tended to move to those areas where the modern factory system has been established, because of excellent water power or the existence of natural resources, such as coal, iron

ore, petroleum, and other essentials of modern manufacturing industry.

The empire of machines, the factory system, and modern urban life have produced a vast change in the range and variety of stimuli operating upon man in contemporary civilization. One can, perhaps, best visualize this alteration by comparing the life of the average peasant of the year 1750 with the daily experiences of a typical laborer at the present time in a modern industrial city. The experiences of the peasant of two hundred years ago did not differ widely from those of the Lake Dwellers in Neolithic Switzerland. The great majority of stimuli were those which were original or derived directly from nature itself. The peasant of this day knew nothing of modern city life. He was ignorant of the modern street car, subway, paved street, theater, movingpicture house, telephone, telegraph, or any other of the many and diverse aspects of modern material culture. No less elementary were the stimuli in his daily industrial activities, confined chiefly to the simplest kind of agricultural life or to handicraft methods of manufacturing. As compared with the modern factory situation in an urban environment, the range of stimuli coming to the average workingman of the eighteenth century was most elementary and simple indeed. His life and outlook were markedly similar to those of the rural Negro in the southern United States today. It is probably true that

many individuals commuting from a suburban environment to a metropolitan position, and remaining in town for dinner and theater, are faced during a single day with a greater range and variety of experiences than came to the average English peasant of 1750 in an entire lifetime.

The human organism was very gradually adapted to meet the needs of a very simple environment, which did not change to any considerable extent for thousands of years prior to the eighteenth century. Hence, there can be no doubt that an extremely difficult problem in adaptation and adjustment has been created by this transformation of the social environment. An organism which was fairly well adapted to meet the demands of a simple agricultural environment, with its elementary economic and social life and its monotonous repetition of functions and processes, is faced with a vastly different problem in modern urban life. The increased nervous strain which is involved in meeting the new situations, the new noises, the new dangers, the new types of recreation, and the greater necessity for rapid adjustment and readjustment, constitutes by far the most severe test which has ever been put upon man as a biological and sociological product.

Consequently, it is not difficult to understand that modern industrialism has produced a far greater volume of mental and nervous diseases than ever before existed. To be sure, the number, as revealed by the gross numeri-

cal statistics, needs to be scrutinized in the light of the fact that in earlier days there was no real attempt made to isolate and segregate those suffering from mental and nervous breakdowns. Nevertheless, it cannot be doubted that the number of mental and nervous wrecks has enormously increased in every state thoroughly affected by the Industrial Revolution. These tragedies have been produced, not merely by the conditions of work within the factory, but also by the novel situations and strains created by the new methods of life in urban centers.

Serious problems have arisen from the fact that our general cultural traditions, ethical standards, customs, and folkways, are becoming progressively less adapted to furnishing adequate guidance in the modern age. The prevailing mores have been, well nigh without exception, given form and content hundreds or thousands of years back in the history of the race. In many cases they had become anachronistic before the eighteenth century. With the remarkable transformation of conditions which the Industrial Revolution produced, these customs and institutional guides of life have become even more pathetically inadequate. A large amount of mental and nervous wreckage has been caused, as Trotter, Ogburn, and Wallas have well indicated, by the lack of adjustment between our customs, ethical standards, and institutions, and the material facts and problems of modern life in this scientific and industrial era.

As we are all keenly and sadly aware, then, the Industrial Revolution, while greatly adding to our comforts and the range of our experiences by bringing the whole world together and rendering it in a certain sense accessible to all of us through easy and rapid intercommunication, has left the mass of workers whose lives are passed in factories in almost a worse plight than that of the Greek and Roman slaves. It was evidently too much to expect of our western world that it should effect such an absolutely unprecedented metamorphosis of the material conditions of life, and at the same time guard against all the evils to which the tremendous changes involved might give rise. Long hours of monotonous mechanical work in tending a tireless machine or in repeating some minute operation in the highly efficient but often inhuman division of labor on which our modern industrial system rests, together with insufficient and precarious wages and demoralizing concomitant conditions, form at present the debit side of the balance sheet.

As an offset, promising speedy betterment, we have a growing sense of social justice, a higher appreciation of economic and social expediency, and an enthusiasm for democratic education. The unthinking charity of the Middle Ages has become the organized social work of today, which is begotten and fostered by a union of human sympathy and exacting scientific research. If the machine has produced a new form of slavery, it has

also produced its antidote. It holds out the possibility of abolishing poverty altogether, in the sense of suffering from hunger, cold, and nakedness. For there is now energy enough at man's disposal, in steam and electricity, to supply him with the necessities of life in such abundance that, if properly distributed, no one need be in physical want. What is still more fundamental, with the Industrial Revolution has come a respect, not to say veneration, for labor, which Aristotle would hardly have comprehended. Instead of dreaming of a perfect existence, free from all participation in the task of supplying our material needs, Tolstoi and many others see the ideal life in a happy combination of useful manual labor and leisure. The effect on body, mind, and temper of productive manual work, carried on intelligently, under suitable conditions, and for periods adjusted to the strength of the worker and to his other duties in life, would unquestionably be most salutary. And while we have not yet arrived at this happy adjustment, except in rare cases, we at least no longer scorn manual labor as such, nor do we deem it inherently degrading.

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It is so difficult a task to form any correct estimate of one's own surroundings, largely on account of our very familiarity with them, that historical students have generally evaded this responsibility. They have often de-

clared that it was impossible to do so satisfactorily. And yet no one will ever know more than we about what is going on now. Some secrets may be revealed to coming generations, but plenty of our circumstances will be obscure to them. And it certainly seems pusillanimous, and hazardous, to depute to those yet unborn the task of comprehending the conditions under which we must live and strive.

I have long believed that the only unmistakable contribution that the historical student can make to the progress of intelligence is to study the past with an eye constantly on the present. For history not only furnishes us with the key to the present by showing how our situation came about, but at the same time supplies a basis of comparison and a point of vantage by virtue of which the salient contrasts between our days and those of old can be detected. Without history the essential differences are sure to escape us. Our generation, like all preceding generations of mankind, inevitably takes what it finds largely for granted, and the great mass of men who argue about existing conditions assume a fundamental likeness to past conditions as the basis of their conclusions in regard to the present and the still unrolled future.

Such a procedure becomes more and more dangerous, for, although a continuity persists, there are far more numerous, deeper, and wider-reaching contrasts between the world of today and that of a hundred, or even fifty,

years ago, than have developed in any corresponding lapse of time since the beginning of civilization. This is not the place even to sketch the novelties in our knowledge and circumstances, our problems and possibilities. No more can be done here than to illustrate in a single field of human interest the need of an unprecedentedly open mind in order to avail ourselves of existing resources in grasping and manipulating the problems forced upon us.

Few people realize how novel is the almost universal preoccupation with business which we can observe on every hand, but to which we are already so accustomed that it easily escapes the casual observer. But in spite of its vastness and magnificent achievements, business, based upon mass production and speculative profits, has produced new evils and reinforced old ones which no thoughtful person can possibly overlook. Consequently, it has become the great issue of our time, the chief subject of discussion, to be defended or attacked according to one's tastes, even as religion and politics formerly had their day.

Business men, whether conspicuous in manufacture, trade, or finance, are the leading figures of our age. They exercise a dominant influence in domestic and foreign policy; directly or indirectly they subsidize our education. In other ages a military or religious caste enjoyed a similar preëminence. But now business directs and

equips the soldier, who is far more dependent on its support than formerly. Most religious institutions make easy terms with business, and, far from interfering with it or its teachings, on the whole cordially support it. Business has its philosophy, which it holds to be based upon the immutable traits of human nature and as identical with morality and patriotism. It is a sensitive, intolerant philosophy—like a religious system.

Modern business produced a sort of paradise for the luckier of mankind, which endured down to the World War, and which many hope to see restored in its former charm, and perhaps further beautified as the years go on. It represents one of the most startling of human achievements. No doubt a great part of the population worked hard and lived in relative squalor, but even then they had many comforts unknown to the toiling masses of previous centuries, and were apparently fairly contented.

But escape was possible, for any man of capacity or character at all exceeding the average, into the middle or upper classes, for whom life offered, at a low cost and with the least trouble, conveniences, comforts, and amenities beyond the compass of the richest and most powerful monarchs of other ages. The inhabitant of London could order by telephone, sipping his morning tea in bed, the various products of the whole earth, in such quantity as he might see fit, and reasonably expect their early delivery upon his doorstep; he could at the same moment and by

the same means adventure his wealth in the natural resources and new enterprises of any quarter of the world, and share, without exertion or even trouble, in their prospective fruits and advantages. . . . He could secure forthwith, if he wished it, cheap and comfortable means of transit to any country or climate without passport or other formality, could dispatch his servant to the neighboring office of a bank for such supply of the precious metals as might seem convenient, and could then proceed abroad to foreign quarters, without knowledge of their religion, language, or customs, bearing coined wealth upon his person, and would consider himself greatly aggrieved and much surprised at the least interference.¹

And most important of all, he could, before the war, regard this state of affairs as

. . . normal, certain, and permanent, except in the direction of further improvement, and any deviation from it as aberrant, scandalous, and avoidable. The projects and politics of militarism, and imperialism, of racial and cultural rivalries, of monopolies, restrictions, and exclusion, which were to play the serpent in this paradise, were little more than the amusements of his daily newspaper, and appeared to exercise almost no influence at all on the ordinary course of social and economic life, the internationalization of which was nearly complete in practice.²

This assumption of the permanence and normality of the prevailing business system was much disturbed by

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¹ J. M. Keynes, The Economic Consequences of the Peace, pp. 11, 12.

² Ibid., p. 12.

the outcome of the war. But it was easy to argue that the terrible conflict and its aftermath merely interrupted the generally beneficent course of affairs which would speedily reëstablish itself when given an opportunity. To those who see the situation in this light, modern business has largely solved the age-long problem of producing and distributing the material necessities and amenities of life; and nothing remains except to perfect the system in detail, develop its further potentialities, and fight tooth and nail those who are led by lack of personal success or a maudlin sympathy for the incompetent to attack and undermine it.

On the other hand, there were many before the war, not themselves suffering conspicuously from the system, who challenged its beneficence and permanence, in the name of justice, economy, and the best and highest interests of mankind as a whole. Since the war many more have come to the conclusion that business as now conducted is not merely unfair, exceedingly wasteful, and often highly inexpedient from a social standpoint, but that from an historical standpoint it is "intensely unusual, unstable, complicated, unreliable, and temporary." It may prove to be the chief eccentricity of our age; quite as impermanent as was the feudal and manorial system or the rôle of the medieval Church or of monarchs by the grace of God; and destined to undergo changes which it is now quite impossible to forecast.

In any case, economic issues are the chief and bitterest of our time. It is in connection with them that free thinking is most difficult and most apt to be misunderstood, for they easily become confused with the traditional reverences and sanctities of political fidelity, patriotism, morality, and even religion. There is something humiliating about this situation, which subordinates all the varied possibilities of life to its material prerequisites, much as if we were again back in a stage of impotent savagery, scratching for roots and looking for berries and dead animals. One of the most brilliant of recent English economists says with truth:

The burden of our civilization is not merely, as many suppose, that the product of industry is ill-distributed, or its conduct tyrannical, or its operation interrupted by bitter disagreements. It is that industry itself has come to hold a position of exclusive predominance among human interests, which no single interest, and least of all the provision of the material means of existence, is fit to occupy. Like a hypochondriac who is so absorbed in the processes of his own digestion that he goes to the grave before he has begun to live, industrialized communities neglect the very objects for which it is worth while to acquire riches in their feverish preoccupation with the means by which riches can be acquired.

That obsession by economic issues is as local and transitory as it is repulsive and disturbing. To future generations it will appear as pitiable as the obsession of the seventeenth century by religious quarrels appears today; indeed, it is less rational, since the object with which it is concerned is less important. And it is a poison which inflames every wound and turns each trivial scratch into a malignant ulcer.³

Whatever may be the merits of the conflicting views of our business system, there can be no doubt that it is agitating all types of thoughtful men and women. Especially is this true since the great depression set in some years ago when the fantastic "Coolidge prosperity" collapsed. Poets, dramatists, and story-writers turn aside from their old motifs to play the rôle of economists. Psychologists, biologists, chemists, engineers, are as never before striving to discover the relation between their realms of information and the general problems of social and industrial organization. And here is an historical student allowing the dust to collect on medieval chronicles, church histories, and even seventeenth-century rationalists, once fondly perused, in order to see if he can come to some terms with the profit system. And why not? Are we not all implicated? We all buy and many sell, and no one is left untouched by a situation which can in two or three years halve our incomes, without fault of ours.

We have recalled the process by which man has accumulated such a mind as he now has, and the effects of this accumulation on his mode of life. Under former conditions (which are now passing away) and in a state

*R. H. Tawney, Sickness of an Acquisitive Society, pp. 183-184.

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of ignorance about highly essential matters (which are now being put in quite a new light) he established certain standards and practices in his political, social, and industrial life. His views of property, government, education, the relations of the sexes, and various other matters he reaffirms and perpetuates by means of schools, colleges, churches, newspapers, and magazines, which in order to be approved and succeed must concur in and ratify these established standards and practices and the current notions of good and evil, right and wrong. This is what happened in the past, and to the great majority of people this still seems to be the only means of "safeguarding society."

Man has never been able to adapt himself very perfectly to his civilization, and there has always been a deal of injustice and maladjustment which might conceivably have been greatly decreased by intelligence. But now it would seem that this chronic distress has become acute, and some careful observers express the quite honest conviction that unless thought be raised to a far higher plane than hitherto, some great setback to civilization is inevitable.

Yet instead of subjecting traditional ideas and rules to a thoroughgoing reconsideration, our impulse is, as we have seen, to hasten to justify existing and habitual notions of human conduct. There are many who flatter themselves that by suppressing so-called "radical" thought and its diffusion the present system can be made to work satisfactorily on the basis of ideas of a hundred or a hundred thousand years ago.

While we have permitted our free thought in the natural sciences to transform man's old world, we allow our churches, schools, and even our universities to continue to inculcate beliefs and ideals which may or may not have been appropriate to the past, but which are clearly anachronisms now. For the "social science" taught in our schools is, it would appear, an orderly presentation of the conventional proprieties rather than a summons to grapple with the novel and disconcerting facts that surround us on every side.

At the opening of the twentieth century the so-called sciences of man, despite some progress, are, as has been pointed out, in much the same position that the natural sciences were some centuries earlier. Hobbes says of the scholastic philosophy that it went on one brazen leg and one of an ass. This seems to be our plight today. Our scientific leg is lusty and grows in strength daily; its fellow-member—our thought of man and his sorry estate—is capricious and halting. We have not realized the hopes of the eighteenth-century "illumination," when confident philosophers believed that humanity was shaking off its ancient chains; that the clouds of superstition were lifting, and that with the new achievements of science man would boldly and rapidly advance

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towards hitherto undreamed-of concord and happiness. We can no longer countenance the specious precision of the English classical school of economics, whose premises have been given the lie by further thought and experience. We have really to start anew.

The students of natural phenomena early realized the arduous path they had to travel. They had to escape, above all things, from the past. They perceived that they could look for no help from those whose special business it was to philosophize and moralize in terms of the past. They had to look for light in their own way and in the directions from which they conjectured it might come. Their first object was, as Bacon put it, *light*, not *fruit*. They had to learn before they could undertake changes, and Descartes is very careful to say that philosophic doubt was not to be carried over to daily conduct. This should for the time being conform to accepted standards, unenlightened as they might be.

Such should be the frame of mind of one who seeks insight into human affairs. His subject matter is, however, far more intricate and unmanageable than that of the natural scientist. Experiment on which natural science has reared itself is by no means so readily applicable in studying mankind and its problems. The student of humanity has even more inveterate prejudices to overcome, more inherent and cultivated weaknesses of the mind to guard against, than the student of nature.

Like the early scientists, he has a scholastic tradition to combat. He can look for little help from the universities as now constituted. There the professors, even the professors of economics and sociology, stick resolutely to their stereotypes, for the most part, and go on rationalizing the old errors and vices that threaten the very security of humanity today.

It is often, and correctly, stated that the solution of any one of our major problems is a matter of education. But it is a matter of a far different type of education from that which we have had in the past. Our past education has not saved us from depressions at home or from wars abroad. The majority of the men who headed our economic machine towards the abyss were highly educated men. Most of our banking leaders are graduates of Harvard, Yale, and Princeton. And the men who made the war in 1914 were cultivated gentlemen, some of them, like Bethmann-Hollweg, solemn doctors of philosophy. And those who launched the New Deal and kept it tied to the bankrupt and discredited "pain economy" of scarcity were none other than the much-vaunted "brain trust." Indeed, the moss-backed newspaper critics of the Roosevelt Administration have concentrated their venom chiefly in the charge that the country is being run by professors. We need a lot of education to set us on the right economic track. But it must be a new brand of education which accepts as its corner stone in the eco-

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nomic and social world the economy of abundance which is veritably "just around the corner," if we only had sense enough to realize it. Otherwise, our civilization is likely to perish in as stupid a fashion as the hen in the fable who starved to death roosting face out on the rim of a bushel basket filled with grain. No more grim or ironical lines have ever been written in the human comedy than those of which our own generation has been the author-starving in the midst of plenty, and ordering the curtailment of food and industrial production when men and women and children are hungry, illclad, and abominably housed. Even the witchcraft delusion was more understandable and more excusable.

CHAPTER IX

ON GOVERNING OURSELVES

CINCE the times of Plato and Aristotle many a heavy **J** book has been written on government, its origin, its various forms, its legitimate sources, and its just powers and limitations. Practically none of these describe the way in which governments have actually been run, but rather the ideals according to which they should be conducted. In all governmental policy there have been overwhelming elements of personal favoritism and private gain, which were not suitable for publication. This is owing to the fact that all governments are managed by human beings, who remain human beings even if they are called kings, diplomats, ministers, secretaries, or judges, or hold seats in august legislative bodies. No process has yet been discovered by which promotion to a position of public responsibility will do away with a man's interest in his own welfare, his partialities, race, and prejudices. Yet most books on government neglect these conditions; hence their unreality and futility. All these statements are historical facts of the utmost importance.

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Perhaps the most realistic and penetrating suggestion about the origins and nature of the state ever written is that which is contained, incidentally, in the late Thorstein Veblen's ironic book on *Absentee Ownership*. Mr. Veblen thus describes the character of the state and of the forces which have kept it going:

State-making was a competitive enterprise of war and politics, in which the rival princely or dynastic establishments, all and several, each sought its own advantage at the cost of any whom it might concern. Being essentially a predatory enterprise, its ways and means were fraud and force. The several princely and dynastic establishments took on a corporate existence, with a corporate interest, policy and organization; and each of them worked consistently at cross purposes with all other similar corporations engaged in the same line of adventure. Among them were also principalities of the Faith, including the Holy See. The aim of all centered in princely dominion and prestige, and in unearned incomes for the civil, military and ecclesiastical personnel by whose concerted efforts the traffic in state-making was carried on. Any one of these dynastic corporations could gain further dominion and prestige only at the expense of others of their kind, and only at the cost of their underlying population. It is a matter of course that the loss, damage, decay or discomfort of any one counted as gain for the rest; all gains being differential gains.

The traffic was carried on then as now by warfare and warlike diplomacy; which always revolves itself into an expenditure of life and substance on the part of the under-

lying population of all contending parties. It was always, as it has always continued to be, an enterprise of intimidation which counted on an eventual recourse to arms-*ultima ratio principum*-and the business was always, then as now, worked out in terms of mutual damage and discomfort, the outcome being decided by the balance of damage and loss; the cost in life and substance falling then as now, on the underlying population, and the gains in dominion, prestige and goods going to the princely establishment and the kept classes.

It needs only a few modifications of phraseology to make this description fit not only the earlier history of government, but public affairs in our own day of so-called democracy and government "for the good of the governed."

Man has provided for social control through a wide diversity of governmental forms. First, he governed himself through agencies based upon blood relationships, real or assumed-clans, tribal assemblies and the like. Next came feudal relations based upon a personal bond. Then monarchy and empire held sway until after the French Revolution and its reverberations throughout Europe. But in the nineteenth century the trend was everywhere in the western world towards constitutional government, representation and democracy. Until the recent rise of Fascism, all forms of government other than democracy seemed to possess only a curious historical significance.

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As a form of government, democracy means control through an expression of majority opinion. But democracy implies something more than government. It means a sufficient degree of freedom to permit the full development of the latent potentialities of every human individual. We no longer cling to the old-fashioned notion that all men are equal. But it may safely be maintained that every person should have an opportunity for selfexpression in proportion to his innate ability to develop and express himself in a professional and cultural sense. The limitations imposed should be only those which grow out of differences in human endowment. In this chapter we shall trace the development of man's groping towards democracy or the principle of self-government. Democracy may have its temporary setbacks and may even vanish for a time, but we may rest assured that there will be no permanently satisfactory form of society which does not permit man to have some voice in the control of his actions and aspirations.

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The earliest type of social organization among primitive men was the local group organized about the family and the village. It is in these small social groupings that the nearest approach is found to the so-called "primitive democracy." The much-vaunted tribal assemblies -such as the German *folkmoot*-have been reduced by modern critical research from the "original fountain springs of political liberty," as pictured by such writers as Maurer, Kemble, and Freeman, to mere formal gatherings to confirm a preassured acquiescence in the policies of the leaders of the group-a function not dissimilar to that of the American party convention. A distinguished authority has remarked that the defiance of the policies of the chiefs by a tribal assembly was such a rarity as to constitute no less than a political revolution. As primitive society evolved into political or civil society the undemocratic features of its social organization markedly increased. In no other period of civilization has the individual counted for so little or been so circumscribed in his liberty as in this period of the formation of states and the development of the Oriental despotisms. The facts almost justify Hegel's famous dogma that in the ancient Oriental age only the despot enjoyed freedom.

It is impossible to make any sweeping statement as to the degree of democracy realized in ancient Greece, for the situation varied greatly in different periods of Greek history. The sweeping transformations of Greek governments from tyranny to aristocracy and from aristocracy to so-called democracy were so frequent as to give rise to the famous Platonic and Aristotelian theory of the cycle of governmental changes. Real democracy was not, however, prominent in Hellenic society. Even Athens, the most liberally inclined of the Greek citystates, could scarcely be regarded as a democracy in the modern implication of the term. Greek democracy meant relative social and political equality among only the citizen class—the class that, in the opinion of Aristotle, was "born to rule." Within this privileged citizen class, however, Athenian society made the closest approximation to democratic control of group activities that was attained in antiquity.

In republican Rome the same general conception of exclusiveness in citizenship existed as had prevailed in Greece. The numerous slaves and hostages were excluded from the political life of the state. Within the citizen body itself there was less democratic control of political activities than had existed in Athens. Despite the gains made by the plebeians in the fourth century B.C. and the later attempts of the brothers Gracchi to break down the dominion of the aristocratic governing clique, the government of Rome drifted steadily into the control of the autocratic ordo senatorius and from that into the Principate and the Empire. The sodalities, or industrial associations, were the only approximation to social democracy, and they were discouraged or prohibited by the government. During the imperial period a slight movement towards democracy might be detected in the reduction of the number of slaves through manumission and the extinction of many sources of supply. But this minor symptom was more than offset by the

growth of an orientalized imperial despotism, the increase of the Senatorial plutocracy, the extinction of the *curiate*, or urban middle class officialdom, through the disproportionate burdens of taxation imposed upon it, and the rise of a caste system. As a result, the middle class, the lower-class freemen, and the slaves were very generally absorbed in the semi-servile system known as the *colonate*.

Classical antiquity, then, never created real democracy in the political, social, or economic sense. It passed, leaving behind it a more decided condition of inequality than it had received from the rudimentary tribal society with which it had started.

With the Barbarian "Invasions" and the establishment of the Teutonic kingdoms the fruits of classical civilization were, for the most part, lost. Western Europe dropped back in a cultural sense into the conditions out of which ancient civilization had developed a thousand years earlier. Even the feeble advances of classical civilization in the direction of democracy had to be regained before any further progress could be made towards securing personal freedom, mass enfranchisement, and popular control of public policy.

Feudal society, developing from roots in the Gallo-Roman *villa* and in the German *Mark* and *comitatus*, offered little opportunity for the growth of democracy. With its moderate perpetuation of the slavery of classical times and its retention on an extensive scale of the near-serfdom originally found in the *colonate* of the later Roman Empire, the feudal age was even less democratic in a political sense than were the classical citystates. On the manors there were some democratic tendencies in the intimate communal life of the serfs. Some symptoms of democracy also appeared in the medieval free towns, but these were not extensive. The political, social, and economic organization was hierarchical and restrictive. Equality in the medieval town, as in the classical city-state, meant equality among the favored few.

The Magna Charta long regarded as a harbinger of modern democracy has withered before modern historical research quite as much as the Teutonic *Folkmoot*. It did not mark a movement looking towards modern political liberalism, but was a reactionary manifesto of the feudal lords who were irritated by recent extensions of royal power. In 1215 they made an effort to pull England back into the decentralized lawlessness and local tyranny of pure feudalism. Perhaps the most significant contribution that the medieval Church made to the ultimate trend towards democracy lay in the political theory of the Conciliar Movement. This stressed the principle of representative government in the Church and led to a consideration of the applicability of the same principle to secular governments. Democracy, however, or any strong prophecy of democracy, scarcely appeared during the thousand years that followed the collapse of the Western Roman Empire.

Those colorful developments intermediate between medievalism and modernity, the Renaissance and the Protestant Revolution, contributed little in themselves to the progress of democratic trends. The politics of the Renaissance period were mainly autocratic-whether of city-states or of the rising national states. But the Renaissance did contribute notably to the rise of individuality and hence to the growth of that political individualism which was in line with trends that grew out of early modern capitalism. The Protestant Revolution, contrary to the views of many apologists, added little to democratic trends. Indeed, it made the lot of the peasantry harder than before and helped along the development of the theory of the divine right of kings. But it did stimulate individualism from the religious angle, and it increased the power of the upper middle class, hence accelerating a tendency that was to be carried much further by the Commercial Revolution and the growth of capitalism. There were also some radical Protestant sects, such as the Anabaptists, who did espouse definitely democratic political notions.

Beginning with the sixteenth century and extending over about two centuries, there occurred that sweeping transformation which marks the dawn of modern society-the expansion of Europe and the Commercial Revolution.

The most important of all the political results of the Commercial Revolution was the great increase in the numbers and strength of the *bourgeoisie*, or middle class. This element in society, as Werner Sombart and others have made amply clear, was destined for centuries to be the center from which most liberalizing influences spread. The *bourgeoisie* ultimately secured the well-nigh universal destruction of the autocratic social and political régime that had characterized the Middle Ages.

During the seventeenth and eighteenth centuries, between the death of Elizabeth, in 1603, and the founding of the first French republic, in 1793, the theories of earthly rule underwent great changes which lie back of the prevailing ideas of our own time. The Constitution of the United States, which slightly antedates the French Revolution, is still accepted, with some slight modifications, as embodying the correct form of principles of government for over a hundred millions of people. It is the product of the late eighteenth century. The prevailing conditions, and their reflection in theories which brought about the Federal Constitution and the first French republic, have gone on operating and developing down to the present.

They have produced certain important results: (1) the decline and ultimate disappearance from Europe of

the theory of the divine right of kings, and the overturning of almost all of the European thrones, including those of the Kaiser, the Tsar, and the Sultan; (2) the replacement of the old belief in divinely appointed or hereditary kings by the sovereignty of the people and by methods whereby all adult citizens, both men and women, may vote for their chief state officials; (3) the supremacy of the civil government over religious bodies, or a sharp separation of Church and State, with a growing indifference upon the part of governments as to what religious views their citizens hold; (4) the great weakening or disappearance of the two classes which formerly largely influenced public affairs-the clergy and the nobility-and the tendency of powerful business interests to take their place; (5) the growth of nationalism, a belief that the state is not merely the territories which a dynasty managed to bring under its scepter, but the fundamental unity of a people in sentiment, language, and racial traits; and lastly, (6) the question that has inevitably arisen as to how the newly conceived nations are to make terms with one another and come to live in peace in spite of all the terrible warlike traditions set by the older governments.

One conspicuously democratic development in seventeenth-century England-namely, the rise of the so-called "Levellers" during the period of the Commonwealthcalls for special mention. They were made up of real democrats both within the army and outside and were led by John Lilburne, who deserves a prominent rank among the few leading apostles of democracy. The Levellers boldly proclaimed the sovereignty of the people and held that Parliament should be the servant rather than the master of the mass of Englishmen. They demanded universal manhood suffrage, excluding only those who were servants or paupers, annual sessions of Parliament, and equal electoral districts. They also espoused a number of other democratic proposals, such as abolition of imprisonment for debt, elimination of monopolies and sinecures, abolition of tithes, and reform of the criminal law. In much of their program they anticipated the policies and demands of the Chartists just two centuries later. The Levellers certainly constitute the most significant democratic development before the days of the Jacksonian Democrats in the United States and the Chartists in England.

m

The French Revolution of 1789 to 1795 was the product of the abuses of the old régime, of the revolutionary political theory of the English Whigs, of the intellectual impulse from the French *philosophes*, and of the American example of a successful experiment with revolution and the beginnings of "democracy." The third estate had been too weak in 1614 to oppose suc-

cessfully the combined strength of the monarch and the first two estates. Its strength had so increased by 1789, as a result of the effects of the Commercial Revolution, that it was able to coerce the monarch, the weakened nobility, and the clergy. It proceeded to clear away not only the vestiges of feudalism, but also the oppression of the Church and the tyranny of the monarch.

The calling of the Estates-General in 1789 is worthy of passing mention in any historical survey of the development of democracy because the first instance in history of the legal exercise of universal manhood suffrage occurred quite incidentally in the process of electing the deputies of the third estate. This partial exercise of universal suffrage was not, of course, a deliberate democratic gesture on the part of the government. It was a result of the carelessness, indifference, and ineptitude of the French Minister, Necker, in arranging for election of the deputies.

The most significant achievements of the French Revolution were the abolition of those economic and social aspects of feudalism which still persisted, the establishment of a constitutional monarchy in 1791, and then of a republic in 1792. Though many of these reforms proved transitory, their effect was never entirely lost and they constituted the stimulus and precedent for the more gradual development of French democracy in the nineteenth century.

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In all other important European states, with the exception of the reforms attempted or executed by the Benevolent Despots, the old régime, with all of its medieval institutions and practices, remained practically undisturbed until the nineteenth century.

The establishment of an aristocratic republic in America in the closing years of the eighteenth century marked an important step in the development of democracy. While American society and politics at the beginning of our national history abounded in undemocratic features, the new state had been founded on revolution from established authority. It was one of the first examples in history of an extensive federal republic and of a government organized on the basis of a written constitution formulated by a national constituent convention. It therefore stimulated the growth of constitutionalism and republicanism elsewhere, most notably in France, and it laid the foundations for what became in the nineteenth century the most ambitious experiment that has yet been conducted in the democratic control of political institutions.

When the French began to inscribe Liberty, Equality, Fraternity on their public buildings, they had entered a protest against the ancient despotisms, social ranks, privileges, and class distinctions which had hitherto prevailed. They formulated their ideals in the Declaration of the Rights of Man. The successive French assemblies, as we

just noted, passed laws and drew up constitutions which abolished not only kingship, but the aristocracy, and greatly reduced the former powers of the clergy. While Napoleon reëstablished the old order to a considerable extent, he resorted to a general vote of the people at large when he desired to secure sanction for an important alteration in the form of government. Then came the reaction after the Congress of Vienna. But new and strange forces were in operation which conspired to increase the number of voters in the various European states, until finally all men—and in many states all women as well—were invited to go to the polls.

IV

Nearly all the continental leaders who took part in the Vienna settlement of 1815 detested the theory and practice of representative government; if they accepted the system in France it was because they had to yield to necessity. To the rulers of Austria, Russia, and Prussia the very terms "representative government," "democracy," "manhood suffrage," "ministerial responsibility" let alone "republic"—were odious beyond description. In trying to put in order the affairs of Europe in 1815, they did their best to suppress or check the advances of such ideas in any shape or form. Although English statesmen adhered to the principle of parliamentary government, they insisted on loyalty to the monarchical principle and were as eager as Metternich to stamp out all agitation in favor of extreme democracy in the form of manhood suffrage.

Those leaders who brought about the settlements in the respective countries were often keen and experienced men; but history was to reverse their judgment and assure the complete triumph of reforms which they fought. Within a little less than sixty years France underwent three more revolutions and established the republic which endures today; England, after many agitations and threatened violence, almost reached the goal of manhood suffrage; the internal affairs of Germany, Italy, Spain, and Austria were profoundly altered. In western Europe, representative government and manhood suffrage, the terrible specters of 1791, were apparently assured by 1870, while in central and southern Europe important steps had been taken in that direction. Metternich himself, who did not pass from the political scene until 1859, lived to witness the practical victory of everything that he feared and hated, and the ruin of all upon which he had fixed his hopes and affections. "Universal democracy," wrote the petulant Carlyle in 1834, "whatever we may think of it, has declared itself an inevitable fact of the days in which we live; and he who has any chance to instruct or lead in his days must begin by admitting that: new street-barricades, and new anarchies, still more scandalous if still less sanguinary, must return and again return, till governing persons everywhere know and admit that." Nothing could have been truer as a statement of fact or as a prophecy. The political history of fifty years is summed up in this declaration and warning.

The prevailing of democracy has by no means been confined to the right to vote. Old distinctions in dress have disappeared, so that today the king of England or of Italy wears the same kind of clothes as does a clerk in a New York department store. The queen of Holland can hardly be told by her gown from a maid servant on a holiday. Schools have everywhere been established, to teach all boys and girls to read and write. Innumerable newspapers bring the same news to a British lord and his butler. Everybody can talk about the same ball game, scandal, or murder at the same time. Big business has promoted brotherhood by its anxiety to win customers. Politicians flatter people to gain votes. Hence, it is very interesting to follow the changes which lie back of the tremendous differences between the opening of the nineteenth century and its close. For the French dream of Liberty, Equality, and Brotherhood has been realized to a degree far outrunning the imagination of the National Assembly when it drafted the Declaration of the Rights of Man, in 1789.

Our modern democratic governments are doubtless, to a certain extent, the outcome of the labors and agitations of revolutionists and liberals in general. But underlying their success in extending the right to vote were the tremendous effects of the introduction of machinery and the growth of great cities which broke up the habits of the past and brought people into wholly new relationships. These fundamental changes have been described in the preceding chapter.

The achievement of democracy assumed different forms in the various countries of Europe. But everywhere there was a strong urge to draw up constitutions granting to an ever-increasing number of citizens the right to elect their government officials. This was the "liberalism" of the nineteenth century.

v

Although the revolutions of 1848 seem futile enough when viewed from the standpoint of the hopes of March of that year, they left some important indications of progress. The king of Prussia soon granted his country a constitution which, with some modifications, served Prussia down to the end of the World War. Piedmont also had obtained a constitution. The internal reforms, which these countries speedily introduced, prepared them to head once more, and this time with success, a movement for national unity. Finally there was a general abolition of serfdom in the Hapsburg dominions.

It will be noted that the Revolution of 1848 aimed to do more than the French Revolution of 1789. Not only

was the national question everywhere an important one, but there were plans for the economic reorganization of society. It was no longer simply a matter of abolishing the remnants of feudalism and insuring equal rights to all and the participation of the more prosperous classes in the government: those who lived by the labor of their hands and were employed in the vast industries that had developed with the application of steam machinery to manufacture also had their spokesmen. The relation of the state to the industrial classes, and that of capital to labor, had emerged as vital problems.

In England, the new middle class secured its first important triumph of the nineteenth century in the parliamentary Reform Bill of 1832 and in the Municipal Reform Act of 1835. These reforms destroyed the almost medieval system of election and representation which had persisted in England until that time. They gave political recognition to the dislocation of economic interests and the population shifts that had been caused by the early Industrial Revolution. They were scarcely a direct victory for democracy, for they did not carry with them an enfranchisement of the masses. But they did constitute an indirect triumph in that they brought into power the bourgeoisie, which proceeded to clear away some of the most formidable obstacles to the ultimate realization of democracy. The democratic movement of this period -Chartism-proved a pathetic failure, but essentially all

of the Chartists' demands—(1) universal manhood suffrage; (2) vote by ballot; (3) equal electoral districts; (4) removal of property qualifications for members of Parliament; (5) annual elections of Parliament; and (6) payment of members of Parliament—have since been realized, a significant testimony to the progress of democracy in England.

The first important direct step in the actual realization of political democracy in England came in Disraeli's Borough Franchise Bill of 1867, which brought something approaching universal manhood suffrage to the residents of boroughs. A similar extension of the franchise to the working-classes in the country districts by Gladstone's suffrage bill of 1884 made England a political democracy, even though universal manhood suffrage was not won. The process was carried farther by the sweeping Franchise Act of February, 1918, which brought universal suffrage to men and introduced on a liberal scale the principle of woman suffrage. Woman suffrage won its final victory in 1928.

Two centuries earlier England had established the supremacy of Parliament. Therefore, when the people secured the vote they were able to use it directly to influence the policies of the government and to secure for themselves some of the substance as well as the forms of political and social democracy. The grip of the people upon the legislative power in Great Britain

was tightened by the Parliament Act of 1911, which finally assured the supremacy of the House of Commons. A Labor government has twice been in office since the World War.

Democracy was fully achieved in the United States before it was in any major European state. This was due to the fact that in the United States there was not only an urban working-class, but also a frontier society which was, as the late Professor Turner pointed out, strongly democratic in its ideals and practices. The frontiersmen joined with the city workers to bring democracy into existence in our own country by about 1830 --at a time when Europe was still dominated by the reactionary policies of Metternich and his sympathizers.

During the first forty years of its existence, the policies of the United States were controlled mainly by the rich and "well-born" as John Adams called the upper class of society. Educated, conservative men who looked to Europe for the traditions of government filled the presidential chair and the other high offices. But even during this period a gradual change was taking place—a change which found its most striking expression under Andrew Jackson; no longer were the "wellborn" able to dictate policies; the common people were coming to the fore. The new spirit manifested in politics was brought about by a transformation which had been creeping over the literary, social, religious, and

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economic life of America during the first years of the nineteenth century. Andrew Jackson did not bring it about; he himself was but a product of the age and of the new West. He became, however, the political torchbearer of the new American spirit.

By the beginning of the nineteenth century the eastern part of the United States was gradually changing from a section where farming predominated to one where manufacturing was becoming more important. This change was hastened by the embargo during the Napoleonic Wars, the introduction of power machinery, and the development of better trade routes. The factory system with its power-driven machines, which gradually took the place of home workshops, brought many alterations into the life of the laboring-man. He was no longer his own "boss." He had to work with machines belonging to a factory-owner, who regulated his hours and wages. It was not unusual for factory hands to work fourteen hours a day for six days in the week. The mechanics and factory workers of the East often had no vote, because of the qualifications regarding residence and property. They felt that their interests were not properly looked after in Congress and the state legislatures, and, like the settlers in the newer Western states, they demanded greater democracy in government. Because of the fact that they were massed together, they exerted considerable political influence even when they cast no votes.

By 1830 one-third of the people of the United States were living west of the Allegheny Mountains, and a very powerful movement toward democracy came from them. The Westerner was dominated above all by a feeling of independence and by the aspiration to be selfgoverning. There was a general sense of equality, due in part to the fact that the hard conditions of frontier life actually made people there somewhat equal in ability, the weaker dying off on account of the great hardships of life. Then there was a democratic feeling, linked up with that of equality and independence, and well expressed in the Western saying that "a fool can put on his own shirt far better than any wise man can do it for him." The tendency of the West was to cut loose from all traditions. There a man was valued for what he could do, and his physical strength and bravery counted for more than his education or ancestry. When the frontiersmen formed their state constitutions they usually gave the right to vote to all white male citizens, thus doing away with any property qualification. The West, always eager for new settlers, advertised this liberality in order to attract people from the East. As a consequence, the older states were forced to modify their suffrage laws, until gradually it became possible for

men in either East or West to vote and hold office, although they did not own property.

The two democratic forces, recruited from the Eastern factories and the Western frontier merged in 1828 to sweep their champion, Andrew Jackson, into the White House.

Jacksonian democracy marked a new epoch in political history. For the first time a movement which actually believed in the equality of men had definitely triumphed. Jackson, unlike Jefferson, apparently was convinced that all men were equally capable of voting and holding public office. The conditions and theories of the time seemed to afford justification for this doctrine. The conditions of life were relatively simple. The crude agricultural civilization of that time changed slowly, political problems were relatively few and untechnical compared with such modern issues as the ownership of railroads and mines or international financial relations. Therefore, it did not seem so unreasonable as it does today to hold that special preparation for public office was quite unnecessary. On the American frontier the hard conditions of life forced something like a condition of human equality, because the weak were quickly killed off by animals, enemies, and disease. There were no psychological tests at that time to show differences in intelligence. It was also assumed that when people had the right to vote they would be very much inter-

ested in exercising this privilege and would all turn out promptly to vote early on election day. It was further believed that they would show great ability and a strong inclination in the matter of carefully acquainting themselves with candidates and policies, so as to choose those best adapted to the welfare of the country. The political history of the last century has been a severe test of these Jacksonian principles and not a few of them have been shown to be quite mistaken and others to be difficult to exercise in actual practice. But the fundamental attitude of Jackson towards the state and the people still persists in spite of the rude challenge administered by the rise of dictatorships since the World War.

VI

In spite of the optimism concerning the future of democracy a half-century ago, we have now come to have a much more chastened attitude on the whole subject. The democratic wave attained its greatest strength and popularity nearly a century ago, before we possessed any scientific knowledge about man and his political behavior. The idea was sold to the country before we had enjoyed any significant experience with representative government and majority rule.

Democracy of the mid-nineteenth-century variety rested upon the following conditions and assumptions: (1) a simple and unchanging rural society; (2) few

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and simple political problems; (3) local political issues and candidates personally known to their neighbors; (4) the laissez-faire theory of government, which contended that the best government was that which governed least; (5) the dogma of the real intellectual equality of men; (6) the assumption of the equal fitness of all to vote and to hold political office; (7) the anticipation of ardent popular interest in politics and the suffrage just as soon as the right to vote was secured by the masses; (8) the belief in the capacity and inclination of the people carefully to scrutinize candidates and platforms before casting their ballot; (9) the idea of political campaign as periods of adult education in politics; and (10) a firm conviction as to the unique capacity of the common people to sense injustice and launch great moral reforms.

The progress of scientific knowledge concerning man and his behavior in the last century has given us revolutionary new information about man and his conduct. This, together with a hundred years of political experience, has greatly changed the general social setting of political institutions and has transformed our attitude towards man and his political behavior.

The scientific and industrial revolutions have created an urban, industrial and commercial age, changing material conditions more in a decade than the society which existed down to Jefferson's day did in a century or a millennium. Political issues have now become infinitely complex and technical, such as economic planning, the problems of the state ownership and control of railroads and public utilities, federal banking, international finance, world peace, international organization, social security, etc.

Our political issues and candidates are no longer local in character, but have become national and international in scope and appeal. Intimate personal knowledge of the situation has disappeared and political affairs have become distant and unreal to the average voter. The *laissez-faire* theory of government has been compelled to give way before the vast increase of social issues and problems which must be subjected to political regulation and control.

Differential psychology has proved that there is no such thing as even approximate mental equality among men, and has shown that the majority of men range from mediocrity to imbecility. This undermines at once the notion that all are equally fitted to vote and to hold office. Modern political functions require for their successful execution extensive technical training. Indeed, so complicated and technical have social problems become that no one man can possibly be perfectly qualified to hold and administer any of the major public offices. The history of the exercise of the suffrage in the United States since 1850 reveals a steady decline in pop-

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ular interest in voting, the statistics since 1920 showing that women are as little interested in exercising this right as men. Our campaigns reveal but the feeblest power on the part of the population to scrutinize intelligently either candidates or platforms. Political campaigns are designedly made into emotional orgies which endeavor to distract attention from the real issues involved, and they actually paralyze what slight powers of cerebration man can normally muster.

As Mr. Herbert Agar has shown, most of our able Presidents since Jackson, with the exception of Franklin D. Roosevelt, have been political accidents and flukes, rarely a popular choice. We now know that there can be no sound moral movements which are not based on real scientific knowledge of the issues involved, something which we cannot expect to find in the masses.

In short, the whole body of assumptions upon which the old democracy rested has been blown sky high by the growth of scientific knowledge and the test of practical experience in the last century. And, with supreme irony, the war to "make the world safe for democracy," ended by leaving democracy more unsafe in the world than at any time since the collapse of the revolutions of 1848.

The older democracy has been carried down to defeat not only as a result of its own defects as a system of government in an urban, industrial and world civilization. It was also strongly propelled on the way to oblivion by the fact that it has been compelled to assume responsibility for controlling and nursing along the ruggedly individualistic type of capitalism which collapsed in the autumn of 1929 after many years of ominous but unheeded warnings of impending doom. The evils and weaknesses of the old-line capitalism were thrown upon an already overburdened democracy, and it is no wonder that the latter, staggered also by the strains of world war, went down under the double burden.

Fascism and Communism are the two alternatives which are currently suggested as a substitute for democracy, but we may doubt that either is the final solution of the problem.

We do not know what the future can produce as a result of a juncture of superior knowledge and experience. Probably the most desirable immediate reforms are weighted suffrage, based upon the results of intelligence tests given to the whole population, the requirement of scientific and professional training for all candidates for office, the introduction of a combination of proportional and vocational representation, and the extension of the civil-service system to the legislative and judicial branches of the government.

The chief tentative observation that an historian can make relative to the problem of self-government in the second third of the twentieth century is this: material civilization has changed more since the days of Jefferson than it had between Jefferson's age and that of Tutankhamen. Yet we try to control our political life through essentially the same principles and methods that were prevalent in the era of Hamilton and Jefferson. An ox-cart or a saddle-horse would be manifestly inadequate in our age. We need not be surprised, then, that democracy has broken down. The wonder is that it served so long and so well. We must use some of the same inventiveness in politics that has been achieved in material culture. If we do, we may be sure that we shall devise forms of government far more efficient than democracy and yet just as solicitous of human values and reasonable liberties. Most of the difficult problems of government relate to economic matters. It may be that there is some vital truth in the idea of the Technocrats that we must turn the control of economic life over to experts as an engineering problem. As such, it is relatively simple. But it would mean a transition from production for profits to production for service. We may be sure that the vested interests will fiercely resist any such fundamental transformation. With the economic problem out of the way, a chastened democracy might suffice as a means of political control for other aspects of life. At any rate, we may rest certain that if we do not put intelligence to work upon the problem of governing ourselves, Fascism, war, and calamities unparalleled may await the human race.

CHAPTER X

THE ARROGANCE OF NATIONALISM

 $\mathbf{I}^{\text{F} \text{ ONE} \text{ looks up the word "nationality" in the eleventh edition of the$ *Encyclopædia Britannica*, he finds twelve lines about a "somewhat vague term" used in international law. He will also find a little about national anthems, more about national workshops, and most about national debts. Beyond this his curiosity will remain unsatisfied.

Suddenly, in August, 1914, this neglected term assumed a terrible significance. Previously the spirit of nationality had been accepted as on the whole a noble thing, although, like other noble things, it appeared to be a nuisance at times; but when all the chief states of Europe rushed at one another's throats in the name of nationality, all thoughtful outsiders began to wonder whether the current favorable estimate of the emotion could be right when it gave rise to such unprecedented woes. Those who had come to regard war as a form of criminal stupidity unworthy of our age could not but question the excuses offered by nationality for perpetuating armed conflicts between civilized peoples. If na-

tionality causes war, they argued, then nationality must be a wicked thing, which should be got rid of altogether, or so far modified as to lose its ugly traits. But, on the other hand, the national spirit is only patriotism in its modern form, and we have been taught from infancy that no sentiment can more safely be encouraged, since none is worthier of man or more pleasing to God, than love of country. All national anthems substantiate this.

There is, however, nothing exceptional in this case of a cherished emotion which produces fearful disasters. Patriotism resembles religion and love in this respect. To the candid historical student the evil workings of religion are, to say the least, far more conspicuous and far more readily demonstrated than its good results. And as for love, St. Paul's eulogy in I Corinthians, 13, might fairly and squarely be reversed, since we observe in practice that love is unkind, vaunting itself and seeking its own, provoked on the slightest pretense; that it readily imagines all evil, bears little, and behaves itself most unseemly.

National feeling is obviously only a conspicuous instance of those corporate enthusiasms which are spontaneously generated so soon as one recognizes himself to be a member of a group. Whether one belongs to the French Institute, is a Daughter of the Revolution, a brakeman on the B. & O., a delegate to the Eucharistic Congress, is rooting for Harvard, or ascending his genea-

logical tree, he finds his personality agreeably expanding. Paltry, diffident, and discontented "I" becomes proud and confident "We." So precious is this extension and exaltation of our individual life and achievement that it is commonly quite uncritical. We do not ordinarily ask what merit of ours led to our admission to the group, or what we are doing as a member to justify our taking credit to ourselves for what our fellow-members may accomplish. We share honor and dishonor, success and failure, remote as we may be personally from any influence in bringing them about. Man is invincibly social in his make-up, and his craving for group gratifications and loyalties is so urgent that nothing seems to him more noble in his nature than his corporate joys and sorrows.

The reason that we are invincibly social in our aspirations appears to be a very simple one. By a process extending through hundreds of thousands of years the uncompanionable people have been largely eliminated by what is known in biology as natural selection. While we know nothing of the social life of our paleolithic ancestors except by inferences from the habits of modern savages, it is safe enough to assume that they lived in groups; for it seems as if otherwise they could not have survived or have developed the beginnings of civilization, since civilization is essentially a product of group existence. For various reasons it is also safe to assume that the groups engaged in sufficiently constant and

bloody warfare with one another to forward a process of selection which would in the long run favor the survival of those groups in which the coöperative spirit happened to be best developed and the extinction of the groups which proved deficient in those qualities which hold men together in a common enterprise.¹

Whatever we think of war, I do not see how we can possibly get away from the fundamental historical fact that we are all descended from a long line of savage ancestors who fought well and liked to fight. Modern nations are sprung from groups which developed those social characteristics of coöperation and loyalty which made for successful attack and defense; for this was as essential to their survival and the propagation of their kind as getting enough to eat. This will seem very disheartening to some readers, but it is only another way of saying that, historically, coöperative pugnacity has played a decisive rôle in making us by nature a kind of animal given to ready and enthusiastic social organization.

Man is then a *warring* animal, but this does not mean that he is by nature a *fighting* animal. As Dr. Frederick

¹Professor Veblen, *The Instinct of Workmanship*, p. 123, urges with force that the old assumption that human tribes have from the first been engaged in chronic warfare cannot be satisfactorily proved, and that the progress of civilization presupposes sufficiently peaceful conditions to generate it. I express myself guardedly on this point, and do not wish to exaggerate the influence of war, which is after all but one aspect of our complex gregarious nature.

Woods has forcefully emphasized, the individual fighting instinct is, from a social point of view, opposed to the gregarious warring instinct. The quarrelsome man who readily resorted to personal violence would be promptly recognized as a nuisance. "The natures that have not been willing to adapt themselves to the environment of groups have been weeded out."2 Miscellaneous and informal killing within the group could not be tolerated without reducing the chances of the group's victory in the next conflict with its neighbors. I think that this distinction will bring consolation to many who are conscious of the most pacific attitude toward their fellows. Men are ordinarily peaceful within their group, or at least do not exhibit their individual pugnacity in any deadly form; but let the ancient, inherited group spirit be aroused, and the most highly cultivated men will rush to arms, encouraged by the most highly cultivated women.

Defense of one's group is accordingly a human instinct, not a matter of culture, as are most things we call "human nature." "The instinct is there simply because it is an instinct and therefore like all instincts inherited in the germ-plasm of the race. It matters not whether a man's immediate ancestors did or did not actually take part in warfare."³ Most modern biologists

**Ibid.*, p. 21.

²Woods and Baltzley, Is War Diminishing? Introduction.

hold out no hope of lessening the strength of the gregarious war instinct, for it would still be there in undiminished force should generations pass without indulging in war. Our attitude should be that of full appreciation of the intimate and original connection between group coöperation, so precious and indispensable to man, and the instinct to defend the group or advance its interests by violence, which is war.

Π

We did not start out to discuss war, but nationality. But it was the World War that forced nationality on our attention, and the reason for this is now apparent. The group spirit shows itself in two directions: within the group it is marked by friendly coöperation and loyalty, by an exaggerated esteem of the group's achievements and delight in recalling that one is a member of it; but all these traits are tremendously intensified by conscious rivalry with other groups, especially by actual or apprehended attacks from without. Patriotism is made up of two quite different things, love of one's country and dislike and depreciation of foreign peoples. Unhappily, the latter is the more vivid and unreasoning sentiment when once aroused. A man who exhibited no public spirit and consistently dodged his taxes in times of peace might find himself hurrying off to the trenches at the bugle's sound, urged on by an innate property of his

nature of which he himself had not suspected the existence. The war-dance is in our blood. And this is no mere figure of speech, but a well-authenticated scientific conclusion, backed up by adequate historical and anthropological observation. As Mr. Max Eastman points out: "The disposition of European people, grouped in nations, to wage war when their nation is threatened, and to believe it threatened upon a very light excuse, seems to be fixed in the nervous tissue, like self-preservation itself. Men who would not contribute a peaceable eight cents to the public weal, drop their cash, credit, and commercial prospects and go toss in their lives like a song at the bidding of an alien abstraction called the state." We should never understand this did we not realize that this abstraction called the state, alien as it may seem to most of our everyday interests and longings, is the modern equivalent of the tribal group in which our hunting ancestors formed the nature which they transmitted to us, their descendants.

On the surface, nationalism, as we meet it today, is a highly sophisticated product of theories and assumptions about racial characteristics of particular peoples as deduced from their supposed innate temperaments, their past achievements in war, literature, art, religion, and commerce. Underlying it, however, is the never-dying primitive impulse of tribal solidarity to which it can be traced back step by step, a crude, uncritical, instinctive

thing, shared in all probability by all the peoples now existing on the face of the globe, whatever their stage of civilization, common to Bushmen and aboriginal Australians and to Germans, French, and English of the most highly educated classes. But the fact that nationalism is a manifestation of a compelling instinct in no way detracts from the interest and importance of its historical development. Like the still more ancient and compelling sex instinct, it shows itself in manifold ways, and may be subjected to a process of "sublimation," such as is recommended in our efforts to reduce and control the demoralizing results of sexual attraction.

Patriotism, the love of one's *terra patria*, or natal land, is a recent thing. During far the greater part of his existence man has wandered over the earth's face as a hunter and can hardly have had any sweet and permanent associations with the tree or rock under which he was born. But the forerunners of territorial emotion were the group loyalties of the tribe, clan, family, and totemistic group, in whatever order and with whatever peculiarities these may have originated and come to exist side by side. Even when, ten thousand years ago, agriculture began to hold men to one spot until a crop could be garnered, there were still many reasons beside ancient habit for keeping them moving.

The first records of emotions which may properly be called national are to be found in the Old Testament.

The twelve confederated tribes of Israel (or at least what was left of them after the exile) in Judea and the diaspora possessed a lively and varied conviction of common interests, a common origin, and a glorious future. The Greek towns and their colonies, scattered as they were, had not only their local patriotism, but a general feeling of superiority and a certain theoretical solidarity indicated by the comprehensive name Hellenes. Of the love of country the Roman writers have much to say. Cicero declares that of all social bonds those that unite each of us with the commonwealth are the dearest and strongest. "Parents are dear, children are dear, as are our relatives and friends; but our fatherland embraces in itself all our love for every one" ("De officiis," I, xvii, 57). The writings of the Stoics, together with some passages in the later Hebrew prophets, afford us the earliest conscious protests against patriotism. The vast extension of the Roman Empire and the incoming of cosmopolitan religions, such as Mithraism, proselyting Judaism, Neoplatonism, and Christianity, must have undermined the older patriotism which had grown up in the city states, for this could not fail to suffer from the rivalry of these more inclusive competing loyalties.

The Middle Ages had their special group loyalties, corresponding to the manor and the monastery, the commune and the gild, together with the supreme mystical entity of the Holy Catholic Church. The shifting feudal

combinations and the weakness of the kings must have left little scope for anything corresponding to modern national feeling.

ш

There is, so far as I know, no complete history of nationalism.4 If there were, it would have to take into account, by way of introduction, and among other things, the somewhat obvious examples of the manifestations of the group spirit which I have been hastily reviewing. The next step would be to trace the development of the modern national state. This we are wont to distinguish and set off from the fiefs and towns of which it was gradually compounded, from the cosmopolitan Roman Empire, and from the ancient city states, as well as from what we rather vaguely call the Oriental despotisms. It is clear that our present national emotions have to do with the national state, but I am inclined to think that the state came first and then the emotion. For, if we neglect anomalous Switzerland and perhaps Holland, the national states have all grown up about a dynasty. Instead of national feeling, we have to reckon with the subjects' loyalty to their king. Backed by their faithful subjects, the kings fought one another for increased terri-

⁴Professors Hayes, Rose, Muir, and others have made valuable contributions to the subject. For an introductory survey, with elaborate bibliography, see the article, "Nationalism," by H. E. Barnes, in the *Encyclopedia Americana*.

tory. They did not advance national or racial claims, but put forward the rights of birth or of feudal succession. Regardless of race and language, the English kings subjugated, or sought to subjugate, Wales, Scotland, Ireland, and the whole of western and southern France. The French kings laid claim to England, and at times sought to extend their dominion over the western German regions and over northern and southern Italy. The rulers of Spain held Portugal for a time, as well as portions of southern Italy. The German Hapsburgs have always shown themselves singularly indifferent to race, language, and historical traditions in building up the mongrel empire over which they now hold sway. Religious schisms have from time to time offered excuses for territorial aggrandizement. The doctrine of the balance of power has had its influence, and the French kings have urged that of "natural boundaries," geographical, however, rather than racial. So it would seem that the national spirit has not been conspicuous among the various forces which have produced the modern system of states. Down to the end of the eighteenth-century race, language, and common traditions were not much considered in the actual and attempted redistributions of territory, and they have often enough been neglected since that time. So I conclude that whatever forces may have served to generate the national state, the national spirit can

scarcely be one of them;⁵ things happened the other way round: large states having come into existence through the enterprises of monarchs and their ministers, due, perhaps, to altering economic conditions, these larger territorial states have served to stimulate the ancient and everabiding instinct of tribal solidarity in a novel manner, with novel justifications. I am impressed, however, with the great complexity of the whole situation, which I make no pretense of analyzing. I only want to point out a few historical facts which will have to be considered in attempting to trace the development of nationalism as we now know it.

So long as states were composed of *subjects* rather than of *citizens*, the modern emotions of nationality could scarcely develop. Nationality, in our meaning of the term, is a concomitant of another mystical entity, democracy. The French Revolution began, it is true, in a period of philosophic cosmopolitanism—since that was the tradition of the *philosophes*—and the French armies undertook to liberate other peoples from their tyrants in the name of the rights of *man*, not of *nations*. But Napoleon, in a somewhat incidental and left-handed fashion, did so much to promote the progress of both democratic institutions and of nationality in western Europe that he may, in a sense, be regarded as the putative father of

⁵ In the case of the final unification of Germany and Italy, which took place in 1870-71, there can be no doubt that national spirit played an important rôle.

them both. His plebiscites were empty things in practice, but they loudly acknowledged the rights of peoples to decide on vital matters. He was a friend of constitutions -so long as he himself made them. Then his attempt to seat brother Joseph on the Spanish throne produced a really national revolt, and led to the Spanish constitution of 1812 and all its later revivals and imitations. In Italy he stirred a desire for national unity and the expulsion of the foreigner which had been dormant since the days of Machiavelli's hopeless appeal. He is the founder of modern Germany. He succeeded in a task which had baffled German emperors from the days of Otto the Great; for in 1803 he so far consolidated her disrupted territories that the remaining states, enlarged and strengthened, could in time form a strong union and become a great international power. His restrictions on the size of the Prussian army after his victory at Jena suggested to Scharnhorst, Gneisenau, and Boyne a subterfuge which made Prussia the military schoolmaster of Europe, and helped to bring about the sacrifice of millions of lives offered up in the cause of nationality.

Not only was Prussia modernized by the abolition of serfdom and the old class system, but the first goldenmouthed spokesman of nationality was summoned from his philosophic speculations to celebrate the glories of *Deutschthum*. In the fourth and fifth of his never-to-beforgotten addresses delivered after the battle of Jena,

Fichte deals with the salient differences between the Germans and the other peoples of western Europe. That portion of the Germans who have remained in their original dwelling-place possess, he contends, an autochthonous strength and potentiality which assures them a natural supremacy. As an Urvolk they have an Ursprache which can trace its unbroken history back to the first uttered syllable. The German speech alone has from the beginning been a spontaneous outpouring of natural power; in comparison with it all other western European languages are mere corrupt makeshifts. They are dead things compared with the ever-living German, with its roots deep in the original soil from which it sprang. Zwischen Leben und Todt findet gar keine Vergleichung statt. Since language makes the man rather than man the language, the studious German can master the other languages of Europe so that he understands them better than those who have spoken them from childhood; he can comprehend the foreigner better than the foreigner understands himself. But the foreigner can hope to understand a German only by most painfully acquiring his language, and no alien will succeed in adequately translating German in its deeper meanings.

This original language, with its fundamental adaptation to express fully all thoughts and aspirations, is the firm bond which holds the Germans together and gives the nation a profound unity and understanding. They

alone have the true earnestness and purpose that are essential to realizing a system of national education which will result in the highest morality (*reine Sittlichkeit*). Unlike other nations, its leaders impart all their discoveries to the people at large instead of using their superior ability to exploit the people as a blind instrument for the promotion of their own selfish ends. Thanks to their language and all that it implies, the Germans can look forward to vistas of future progress, whereas other peoples can do no more than cast their eyes back to golden ages which can never recur for them.

The claims which Fichte makes for inherent German superiority were carried somewhat further in some directions by Hegel in his celebrated Philosophy of History, based upon a series of lectures first delivered at Berlin during the winter semester of 1822-23. He describes the migrations of the world spirit which found its first incarnation among the ancient Persians, then sought its completer realization among the Greeks and Romans, and finally settled permanently, so to speak, among the Germans. To them, Hegel says in his characteristic manner, it assigned the rôle not merely of possessing the idea of freedom, "but of producing it in free and spontaneous developments from their subjective self-consciousness." "The German spirit," he claims, "is the spirit of the new world. Its aim is the realization of absolute truth as the unlimited self-determination of freedom." The Germans

possess, moreover, a peculiar national and seemingly untranslatable quality, *Gemüth*. This the philosopher luminously defines as that "undeveloped, indeterminate totality of spirit in reference to the will, in which satisfaction of soul is attained in a corresponding general and indeterminate way." I infer that he is speaking of something nice and that the tribal instincts of his audience glowed with complacency in the assurance of its possession. A Frenchman has pointed out a German trait which Hegel does not mention, but upon which he always relied; namely, that in Germany the patience of the reader is always expected to outrun the obscurity of the writer. Like Fichte, Hegel assigned to the Germans a peculiar power of leavening the whole lump in which any of their race happened to be placed.

It is impossible here to give further illustrations of the manner in which German confidence in German destiny and *Kultur* have been fostered. I suspect that no other nation equals the Germans in the *Gründlichkeit* and *Planmässigkeit* with which the spirit of nationality has been cultivated and wrought into education by intellectual leaders.

In France a less turbid, but perhaps equally wide and deep, stream of national self-assurance could be traced if there were time. It would be hard to outdo Nisard's statement that in his effort to portray the French spirit he finds himself almost depicting reason itself. Honor and glory, wit and clarity—these are always conspicuous among the characteristics which French writers discover in a preëminent degree among their fellow-countrymen.

But it is not my intention to call the roll of European peoples, big and little, who achieved political independence before 1914, like the English, Spanish, Italians, and Russians; or who, like the Poles, Bohemians, Croatians, and the discontented among the Irish, aspired to do so in the name of nationality. The histories of the various national spirits might of course be written. They would serve to amuse and sadden the philosophic reader. I venture to forecast that the theories of national peculiarities would be found to be conflicting and mutually exclusive, that they would be based upon many a historical mistake and distortion, upon insolent suppressions and arrogant exaggerations. They would possess exactly the same value as does a blind and ardent lover's description of his mistress. Singing the praises of one's tribe is the natural pastime of a boastful savage. "When Caribs were asked whence they came, they answered: 'We alone are people!' The meaning of the name Kiowa [an Indian tribe now settled in Oklahoma] is 'real or principle people.' The Lapps call themselves 'men' or 'human beings.' . . . The Tunguses call themselves 'men.' As a rule it is found that nature people call themselves 'men.' Others are something else-perhaps not defined-but not real men."6

⁶ Sumner, Folkways, 1911, p. 14.

The word *Deutsch*, according to Grimm, had this meaning originally, and it is amusing to note a certain complacency in German writers who point this out. The Franks, from whose name the French derive theirs, appear to have thought they were "the free."

IV

We have all been shocked by the readiness with which even intellectual persons, especially professors, lapsed, under the stress of war, into the frame of mind of a Carib or Laplander. But this and other recent occurrences only prove that we have expected too much. Our ancient tribal instinct evidently retains its blind and unreasoning characteristics despite the fact that we are able nowadays, by means of newspapers, periodicals, railroads, and telegraphs, to spread it over vast areas, such as are comprised in modern states like Germany, France, Russia, and the United States.

When, by taking thought, exceptional persons come to realize the facts which we have been recalling and succeed in transcending the Carib point of view, their task is that of convincing their fellow-countrymen that *all* men are really men. Here they meet the great obstacle of difference in language, which cuts peoples off from one another. Then the diplomatic relations of modern states are inherited from the seventeenth and eighteenth centuries when the diplomats were agents of

monarchs, scheming for territorial gains. Moreover, to most of our fellowmen, patriotism is a word that still falls most sweetly on the ear. It may seem a criminal abomination in other tribes, but is a most precious thing as we contemplate it in our own. Many seemingly thoughtful people resent even an analysis of it into primitive pugnacity and gregariousness reinforced by "baby love" of one's earliest environment and associations, together with that agreeable sense of exaltation which, as has been pointed out, the group spirit engenders. Many educated persons are temperamentally indisposed to analyze cherished convictions and sanctified emotions. There are, nevertheless, certain considerations that may serve to cheer those who are cast down by the primitive workings of the tribal spirit as they exhibited themselves in the lamentable European conflict of 1914-18.

v

The chief quarrel with patriotism is its innate tendency to precipitate war with other groups upon the most trivial pretenses. It is, in short, touchy and ugly in its most constant and characteristic manifestation. So long as war was accepted by every one as man's noblest preoccupation, this would naturally be no objection to patriotism. War might even be degraded to the status of a necessary evil without leading to any criticism of patriotism, but if warfare is to be viewed as a wholly gratuitous abomina-

tion, the way will be opened for a recognition of the common nature and interests of humanity which it is the chief business of patriotism to forget or obscure. Both the Stoics and the Christians accepted in principle the brotherhood of man, but so far as I know this doctrine never checked a war, secular or religious; and it is only in modern times that two or three Christian sects, bitterly persecuted and maligned by the majority of Christians, have stood out against war on principle, the Anabaptists, the gentle Socinians, and, above all, the Quakers.

When, in 1726, Voltaire visited England, he was charmed with the simple religious beliefs of the Quakers and especially with their denunciation of war. His "Letters on the English," published immediately upon his return to France, introduced his readers to the Society of Friends and their pacifist doctrines. I am inclined to think that anti-militarism as a distinct and growing sentiment may be said to date from this time. So it has not yet had two centuries in which to develop plans and devices for countervailing man's inbred bellicosity. The French philosophes of the eighteenth century often prided themselves on being citizens of the world. They lauded the institutions of the English, Persians, Chinese, or Fiji Islanders as superior to those of their native land. Their influence affected other European peoples. Voltaire was invited to sojourn at the court of Berlin, and it must fill modern German patriots with chagrin to recollect that

the works of their greatest ruler are written entirely in French. Catharine of Russia showed the same eagerness to avail herself of French thought as did Frederick the Great.

The development of the national spirit in the early part of the nineteenth century served to eclipse for a time the rather theoretical cosmopolitan tendencies of the eighteenth. But the progress of mechanical invention was rapidly furnishing new and substantial arguments against tribal isolation by binding the whole world together with railroads, steamship lines, and telegraphs. This in turn produced an unprecedented amount of intercommunication and interdependence and a vast network of commercial and financial relations, embracing all countries, civilized and uncivilized. This is admirably illustrated by a recent writer who has compiled lists of international congresses, conferences, and associations. These have been organized to consider matters which were regarded as of international importance, such as slavery, money, postal service, copyright, opium trade, fur seals, standard of time, bull-fighting, Gregorian chants, and maps of the world. Unofficial conferences have been held by those interested in the grain trade, hats, shoes, printing, glass-blowing, Alpine gardens, indecent pictures, rhinolaryngology, and protection against hail. "Intellectuals," abstinent priests, short-hand writers, feminists, anti-vivisectionists, theosophists, and pigeon

fanciers have found their needs of mutual solace and support transcending the borders of their particular states. Such congresses and conferences occurred rarely before 1870. Their ever-increasing frequency since the opening of the present century is probably the most striking index of the strengthening sense of international solidarity.⁷

The first peace conference was held in 1899. The Hague Tribunal, organized in the same year, included representatives of forty-one states. Here we have a direct attack on the problem of reducing the chances of war. It is noteworthy that the Hague Conference did not have the nerve to make questions of *national honor* matters subject to arbitration. Yet it is just this particular kind of excuse for war which should be most carefully considered before mobilization.

It is not the purpose of this chapter to offer suggestions as to means for controlling and sublimating the ancient instinct of patriotism. I am inclined, however, to think that any one who really acknowledged and believed in the bottom of his heart all the things which I have been recalling would scarcely be swept off his feet by a wave of national emotion. If that be true, then much can be accomplished through education. Of course the native tendency cannot be eliminated, but rival corporate enthusiasms can be established to compete with the old,

⁷ Faries, The Rise of Internationalism, 1915, Appendix.

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crude tribal solidarity. If there were a general realization of the coöperative nature of civilization and of the incalculable debt of each generation to all preceding generations back to the very beginnings of human culture, it would serve to chasten our national conceit. To the modern historical student, somewhat familiar with man's long past and aware of the possibilities of the next five hundred thousand years, national arrogance appears well nigh as farcical as the pomposity of an individual man.

VI

The World War was the end product of the nationalistic spirit in modern history. It produced an unprecedented inflation of nationalistic sentiment and a veritable avalanche of deliberate misrepresentation which we know of as "war propaganda." The practice, of course, was old. It is said that during the American Revolution patriots distributed handbills among British soldiers offering them a bonus and free land if they would desert King George's cause. A few years later both the British and French carried on lively propaganda in the United States with a view to enlisting aid in their wars on land and sea. But peculiar conditions favored the extensive use of propaganda during the World War. The first was the existence of democracy and great literate publics. In the old days the king declared wars and enrolled soldiers; the king's will was law. But now millions of common

people had to be conciliated and convinced. Whole nations were at war, and each government faced the task of keeping its own masses in line and breaking down and demoralizing enemy masses. To sustain the will to war among its own people and to destroy the will to war among enemy peoples was second only in importance to the work of getting men and materials to the battle front. While democracy made propaganda more necessary, modern devices made it more efficient than ever. Swift printing-presses, rapid photography, the penny post, the radio, moving pictures, and the airplane for dropping leaflets put unlimited resources at the command of astute manipulators of words, phrases, and pictures.

All warring countries were quick to perceive the importance of propaganda and speedily set up special agencies to carry on the business. In August, 1914, Great Britain established a small bureau which in the main operated as if it were a private organization engaged in sending out pamphlets. Later other divisions were created in the Home Office, the Foreign Office, and the War Department. Near the end of the war some of these agencies were coördinated under a "Minister of Information," with Lord Northcliffe as "director of propaganda in enemy countries." In Germany several departments of government gave attention to propaganda, and the Great Headquarters of the Army, dissatisfied with the civilian work, organized a "press service" of its own and

even censored materials issued by the civilian branches. France employed her customary diplomatic, military, and naval agencies, maintained a "Press House," and sent special missions abroad. Although the Germans were credited with being the most assiduous of all propagandists, a careful study made by Professor Harold D. Lasswell (*Propaganda Technique in the World War*) shows that they were outnumbered and outrivaled in the somewhat unscrupulous business of spreading abroad "information" useful in winning the war.

By the comparative method Professor Lasswell discovered that the propaganda agencies of all the belligerents had similar "objectives" and employed similar "techniques." Hence a synthetic view of the art is possible. Each government undertook to mobilize the fighting spirit of its own people by creating in them a hatred and loathing for the enemy. This was one of the prime objectives. The second great end sought was to demoralize the enemies by stirring up a revolutionary spirit among their people and their armies-a dangerous game likely to produce unexpected results. The third objective was to win allies by frightening, cajoling, or tempting neutrals and getting them to war against the enemy. The fourth was to keep neutrals from joining the enemy, if it was not possible to win them over. These were the chief ends pursued by war propagandists of all belligerents; and the THE ARROGANCE OF NATIONALISM work of governments was supplemented by the labors of individuals and private societies.

As all the warring countries employed similar agencies and had similar objectives, so all of them resorted to similar devices. The first design was naturally to paint the enemy in the blackest colors, to ascribe to him what Professor Lasswell calls "Satanism," making him the fiend incarnate. Under this head the enemy was accused of willfully planning the war, exceeding all others in armaments, starting the war, mobilizing first, springing it on unprepared and peace-loving peoples, violating international "right and law," and committing the first acts of violence.

Under this head also came long lists of "authentic" atrocities committed in connection with the normal violence of war. The official German thesis claimed that Germany had been "encircled" by relentless enemies under the leadership of England, that Russia mobilized first, that the Russians and the French had been guilty of terrible offenses against German soldiers and civilians, and that Germany had striven for peace with all her might. The war was only a few days old when the Kaiser formally protested to President Wilson against the atrocities of his foes. On the other side, the Entente had a similar catalogue: Germany had willed the war, started it, assailed the "sacred rights of small nations" by violat-

ing Belgian neutrality, and done horrible deeds out of sheer wantonness and inborn cruelty.

In general, the "Satanizing" theory took the form of stories from the battle front, which the newspapers eagerly seized and spread among the masses. Since army officers in charge and civil governments at home both censored and drafted dispatches, it was easy to imagine atrocities and to exaggerate the inevitable horrors of fighting. To question any of these tales was to incur the charge of treason or at least of favoring the enemy. In vain did a number of American war correspondents sign a statement declaring that the Entente reports of German atrocities in Belgium in 1914 were false; as time went on the tales were enlarged and circulated over the names of distinguished men. Equally futile were efforts in Germany to counteract reports of Russian atrocities in the east; for example, when a supposed victim, who had started one of the false stories, repented, and offered a denial, the German authorities refused to allow the disclaimer to pass the censor. Undoubtedly, there were horrors enough on both sides, and wanton acts were committed by sadistic soldiers; but a large part of the atrocity news was childish credulity elaborated with an intense impulse to blacken the enemy and rouse the fighting passions of the multitude.

As the war wore on propaganda widened from atrocity news to include a great range of ideas and mental

"stereotypes." Both sides made an appeal to God and enlisted the help of the clergy. "Go to church and kneel before God and pray for his help and for our gallant army." Such was the advice of the Kaiser to his people at the opening of the conflict. "I believe in the power of right, in the crusade for civilization, and in France, the eternal, the imperishable, the essential. . . . I believe in ourselves; I believe in God." Thus the French creed was formulated by a propagandist. A French religious paper made the struggle "a war of Catholic France against Protestant Germany." This, of course, was resented by Catholics in Germany and perhaps by Protestants in England, but it served its purpose very well for a domestic consumption. When Turkey joined the Central Powers a great deal was made by the Entente of the war between Christianity and Mohammedanism, in spite of the fact that Great Britain was enrolling Mohammedans in India and Arabia, and France was importing Mohammedans from Africa. To religion was added race. "The race war appears," exclaimed a French paper, La Croix-a war between Latins and Slavs on one side and Teutons on the other. Germans replied in kind; it was a war of Germanic Kultur against Slavic barbarism. There were difficulties here also, for the Entente included the English, who were supposed to be Teutonic, and the Central Powers had in their armies Magyars and

Slavs: but the excited public was not always alert in discovering ethnological discrepancies.

On the Entente side, or rather in England and France -scarcely in Russia-the conflict was represented as "a war for democracy and the liberation of peoples." It was a case of popular government against class governmenta struggle for the emancipation of subject races from the dominion of the Teuton. Liberty was to be given to Frenchmen in Alsace-Lorraine, to Italians and Slavs under the Hapsburg yoke. To this type of propaganda the Germans replied by assailing the autocratic government of the Tsar, which certainly had little savor of democracy, and by offering liberty to Ireland and India. It was, of course, a bit difficult to make a clean-cut case for "democracy against autocracy," liberty against imperialism, out of alignment of powers; but each side conveniently overlooked facts contrary to its pretensions. Indeed, calling attention to such inconsistencies could easily be ascribed to "enemy propaganda."

From religion, race, and politics it was but a step to civilization. Each side discovered that it was fighting to save everything in life worth saving-true religion, art, science, morality, music, and business. The Germans continually harped on their *Kultur* and its superior virtues. The Slavs were told by their propagandists that they were fighting to preserve Slavic civilization from

contamination with the decadent West. Italians and French were dying to save Latin civilization. "Civilization at Issue!" exclaimed the London *Evening Standard* when the storm broke. Although there was some difference of opinion as to the meaning of the term "civilization," all parties to the war made persistent use of it for the purpose of stimulating enthusiasm among the masses.

While "atrocities" were played up constantly in the newspapers, other issues were expounded in pamphlets and books by distinguished professors, journalists, and men of letters. One of the favorite devices was to convict the enemy "out of their own mouths," by publishing anthologies of their "wicked and foolish sayings." Many volumes of extracts from the writings of German militarists and imperialists were issued by the Entente to show that the German nation loved war and was bent on pillage. *Gems of German Thought*, compiled by William Archer, had an immense vogue. *Hurrah and Hallelujah*, a collection of extravagances from German clergymen made by Professor Bang, a Dane, was calculated to convince the foes of Germany that her preachers were almost blasphemous in defending their country.

On the other hand, an eminent German sociologist issued for the benefit of his countrymen a book entitled *Warlike England as Seen by Herself*, containing extracts from British writings showing to what lengths Great

Britain was willing to go in conquering other races and seizing their territory for the purpose of making profits out of trade. Besides these more or less private undertakings, each belligerent government prepared a collection of official documents designed to show how the enemy really started the war, while it worked for peace. In every case, as we know now, these "official" publications were characterized by omissions, distortions, modifications, additions, and falsifications, deliberately intended to mislead the reader; but all of them had the appearance of good faith and plausibility.

The importance of the United States for the European belligerents made it a special battleground for propagandists, for the large numbers of its foreign elements— British, Canadians, Germans, Russians, Czechs, Yugoslavs, Italians, and Hungarians—espoused the cause of one side or the other. As soon as the war began representatives of the German cause, official and private, formed societies for the advancement of their interests and started varied activities designed to convince the Americans that Germany was right, that they should stay out of the war, and that they should lend no financial and material assistance to the Entente. A campaign to raise money to buy milk for German babies was begun mainly to show "the cruelties of the British blockade." Editorial writers on the Hearst papers were enlisted.

Two societies were formed to lend local color to such activities: the "Organization of American Women for Strict Neutrality" and the "American Truth Society," the latter giving particular attention to stirring up the Irish against Great Britain. Another special group was formed to protest against the British cotton blockade and enlist sympathy for the Teutonic cause in the cottongrowing states. With a view to stopping the export of horses to the Entente, a moving picture was prepared showing the terrible fate of a noble fire horse killed on the Flanders front. Some of this work was done so quietly and so secretly that it had the appearance of validity. It was difficult to tell where German interests ended and American interests began.

In influencing America the Entente Powers were more active, more ingenious, and more successful than their rivals. British and Canadians, whose names were the same as those common among Americans of the old stock, could work under cover with more facility, and they had the unlimited assistance of the British government. As Great Britain controlled the sea and the cables and censored the news from Europe, most of the daily reports had the Entente rather than the Teutonic color. With respect to "regular British propaganda" in the United States, the methods have been described by Sir Gilbert Parker, who took charge of that enterprise

shortly after the outbreak of the war. Sir Gilbert's office maintained a continuous study of American opinion and reported weekly to the British Cabinet. He himself kept in constant touch with American newspaper men in England and arranged for them to have access to distinguished British political leaders for interviewing purposes. He supplied more than three hundred American newspapers with an English paper giving Entente accounts of the war.

"We established," explained Sir Gilbert, "connection with the man in the street (in the United States) through cinema pictures of the army and navy, as well as through interviews, pamphlets, etc.; and by letters in reply to individual American critics, which were printed in the chief newspaper of the state in which they lived and were copied in newspapers of the state in which they lived and in newspapers of other and neighboring states. We advertised and stimulated many people to write articles. We utilized the friendly services and assistance of confidential friends; we had reports from important Americans constantly, and established associations by personal correspondence with influential and eminent people of every profession in the United States, beginning with university and college presidents, professors, and scientific men, and running down through all ranges of the population." Thus were the minds of Americans

prepared for participation in the war on the side of the Entente.

VII

The main hope for a civilized future lies in the growing disillusionment concerning war as a procedure in human society. To very few does the World War now seem a glorious affair-to most it appears an incredibly stupid, atrocious shame. When the birthday of the German Republic was celebrated in Berlin in 1929, the inscription on the cenotaph erected to the victims of the war read, Allen Toten des Weltkrieges den Opfern der Republik und der Arbeit. There was nothing said of heroes, but only of those sacrificed. Where conscription prevails all the capable have to go (some as eager volunteers; many, on the other hand, with terrific apprehension), to face the bombs along the trenches rather than shame and punishment at home. Early in 1929 appeared a book by a German, Erich Remarque, called, in bitter irony, All Quiet on the Western Front. In seven months over 750,000 copies were sold in Germany. A German writer said of it: "It is unanswerable; it cannot be evaded. It does not declaim; it never accuses. . . . Out of his grave speaks the Unknown Soldier. . . . Let it make its way over the whole world." Thirteen editions of the translation were soon sold in England, and 250,000 copies in the United States. It is an account of the way

the young men of all nations met the horrible situation, and their hopelessness in any attempt to explain to simple patriots at home what war meant. This is but an illustration of post-war literature. Many dramas and books have been written to make clear to all nations the nature of the *Journey's End* for those who were enmeshed in the ancient net of war.

The modern historian is chary of pronouncing moral judgments. He feels it to be his business to describe the past of mankind as truly as he can and let that speak for itself. It is, however, a historical fact that organizations to prevent war and to disseminate a knowledge and understanding of international relations have grown mightily since the bloody business which began in 1914. The Carnegie Endowment for International Peace has been keeping those who desire information supplied with authentic material in regard to international relations. The late Edwin Ginn established in Boston the World Peace Foundation. A stately quarterly, Foreign Affairs, is published under able auspices by the Council of Foreign Relations. The New York Times issued its monthly Current History (sold on the bookstands), to which well-known historians contributed. Various organizations, conspicuously the Foreign Policy Association, and many "institutes," such as that held annually at Williamstown, keep the problems of international understanding before the public by organizing discussions in which rep-

resentatives of interested nations take part. All these enterprises take care to avoid narrow national considerations and endeavor to foster a sense of the comity of nations. The newspapers and the best weekly magazines give an increasing attention to foreign affairs, undreamed of before the war.

The progress of democracy brought with it the democratizing of war. We are one and all in it if it comes -old and young. It is no longer, as has been abundantly shown, the marshaling of troops by a monarch with the hope of getting the better of another prince and his men. Its conspicuous camp-followers are no longer dissolute women and sharpers, but the representatives of the Young Men's and the Young Women's Christian Association, the Red Cross, and the Salvation Army, together with a host of brave volunteer nurses.

Warfare today is an old name for strangely new operations. Modern scientific knowledge has so revolutionized military methods that fighting in our time is scarcely more like that of the Franco-Prussian War than the military procedure of 1870 resembled that of William the Conqueror. There is a justifiable suspicion that if another great conflict should be permitted to occur, the present means of destroying human beings and their property would be increased terrifically. The old kind of warfare is, then, an anachronism—it has indeed, almost completely passed away in countries which have come under

the European influence. Consequently, those who would maintain peace have to face new problems and resort to unprecedented means if the age-long readiness to resort to arms is to be effectively checked, ultimately to die away like religious intolerance, the belief in witchcraft, and the institution of chattel slavery.

In a work called *War as an Instrument of National Policy and Its Renunciation in the Pact of Paris*, Professor James T. Shotwell-a distinguished historical scholar who has devoted many years to plans for the prevention of international conflicts-endeavors to put war in its proper historical perspective. He says:

One thing is clear: the generation that has endured the realities of the World War will demand that the strategy of peace shall be real also. Humanity cannot afford to trust its wistful hopes to anything, however promising, that may betray it in the hour of crisis; nor is it likely that the instrument of war so bravely denounced will be actually discarded if nations still believe that the use of this instrument is essential to them. The meaning of the Pact of Paris is, therefore, to be found not solely, or even mostly, in the text itself, but rather in the history of civilization and a survey of the practical politics of the immediate present. If war has been with us from the beginning of time, it will only yield to forces stronger than itself; whether these really exist in the world today or not is as much the subject of this inquiry as the story of the Pact itself.

Professor Shotwell points out that war is no longer a

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safe instrument for statesmanship. No one can any longer make a guess as to what will happen if war breaks out.

Victor and victim may suffer a common disaster. . . . In short, war which was once a directable instrument of policy has now changed its nature with the nature of modern society and ceases to be controllable and directable in the hands of statesmen. By reason of its all-embracing needs, it becomes a contagion among the nations; and one cannot safely use a contagion as an instrument.

CHAPTER XI

THE TWILIGHT OF THE GODS

VARIOUS notable attempts have been made during the past two thousand years and more to understand and explain man's religious life; but these have been rare and inconspicuous compared with the heated polemics of convinced factions, engaged in attacks and defense. When I was a boy, among the protagonists were Matthew Arnold, Huxley, Tyndall, Ingersoll, Gladstone, Bradlaugh, Beecher, Horace Bushnell-each after his kind. There was Emerson, and some recollection of Theodore Parker. All these did their part in keeping religious issues alive and in shifting them somewhat from their old moorings. Lecky's History of Rationalism and his History of Morals furnished hitherto neglected material for a reconsideration of the actual record of Christian leaders. But all these seem now far-off echoes of a remote past, if one happens to be reading the newer books on religion.

The intellectual climate in which religious beliefs and practices must hold their own today underwent a sharp and surprising alteration in the early twentieth century. New, or hitherto neglected, information about man, his origin and proclivities, his ancient ways, and his observable habits in various stages of culture promised to explain -or at least recast—the whole estimate of religious phenomena. Considerations which could not have occurred to Arnold, Huxley, and Lecky have now become fundamental. It is to this astonishing revolution, wrought by increase of knowledge rather than by theological controversy, that we propose to turn our attention. But first some general reflections on the current use of the words "religion" and "religious" are called for.

Almost everyone takes his own religion for granted, and only in rather exceptional circumstances does he bother much about its contrasts with other forms of belief. But to affirm that one has no religion would not only seem shocking but downright unintelligible to most of our fellow citizens. It is a common, but by no means novel, feature of our times for those who have lost faith in the older tenets to construct a new religion "to put in its place." Marxism has become a religion for many who have no patience with the older foundations of faith. This has been acutely shown by Max Eastman and many others. Langdon-Davies and C. E. Ayres even suspect that Science is being taken for a new religion.

Books on reconstruction of religion flow in an even stream from the presses. The newer varieties usually turn on how much can be retrieved from the desolation wrought in old convictions by increasing knowledge. They ask what an intelligent person can continue to cling to in the way of comforting purposefulness in this universe of ours. I have on my desk a tiny volume called *Troasm*, written by a Middlesex schoolmaster who for prudential reasons would not have his name revealed. I will quote his opening sentences as pertinent to this discussion:

"There is an ancient anecdote, almost threadbare with service, of a disputant who closed his argument with the aphorism that all sensible men professed the same religion; adding, when asked what that religion might be, that no sensible man would ever tell." This has been the attitude of a good many thoughtful people in earlier times. The writer continues: "There can have been few periods in the world's history when the need for a religion that would stabilize and comfort mankind was felt more deeply or more universally than now. Organized creeds seem to the majority of men to have had their trial, with almost everything in their favor, for so long a time that their failure to influence even the surface of the conduct of mankind places them out of court as possible foundations for the religion of the future."

So it seems agreed that religion is something fundamentally essential to human welfare and that those dissatisfied with current beliefs must find some substitute. But what *is* religion?

Π

The word religion is perhaps the vaguest of all the important nouns in our language. Innumerable pathetic efforts have been made to define this most indefinite of terms. Benjamin Kidd in his Social Evolution busied himself collecting definitions of religion, from Seneca to Dr. Martineau. Kant says that religion consists in our recognizing all our duties as Divine commands, while Ruskin declares, "Our national religion is the performance of Church ceremonies, and preaching of soporific truths (or untruths) to keep the mob quietly at work while we amuse ourselves." Huxley and John Stuart Mill, not reckoning any more with God, still clung to the word religion and found it to be reverence and love for ideal conduct and our efforts to pursue it during our life. Alexander Bain, following a new trail, says that "The religious sentiment is constituted by the Tender Emotion, together with Fear, and the Sentiment of the Sublime "

All these definitions are about as individual and personal as the portraits of the men who forged them. So far as Europe and the United States are concerned all religious people, and most irreligious ones, would concur fundamentally in Dr. Martineau's view that "Religion is a belief in an everlasting God; that is, a Divine mind and will, ruling the Universe, and holding moral relations

with mankind." God is to be feared, praised, worshipped, beseeched, and obeyed. We do his will when we attend the ceremonies prescribed by the particular church to which we belong. Certain forms of sacrifice, fasting, and penitence are deemed pleasing to God and essential to the soul's welfare. It is the duty of Christians to follow the strait and narrow way of salvation described in the New Testament, through belief in their Saviour. They are commanded to love their neighbors as themselves and neighbors are those who hold the true faith. All these things would be commonly accepted as salient features of religion in Christian lands.

So much for the attempts to define religion. Would it not be better in the interest of clarity to regard religion, not as a mystic and essential entity, but as a label which we attach to one division of our beliefs, emotions, and deeds? We have many moods, fears, hopes, aspirations, scruples, loves, and abhorrences. Some of these we are wont to call religious, but not so very many. We take various and varying action every day of our lives; we make decisions and pass judgments. A part of our decisions and judgments affecting ourselves and especially others we classify as religious, and a much smaller part of our overt behavior. Secular affairs may well engage us from Monday morning to Saturday night while on the great day of the Sun a goodly portion of our population goes to church and remains there for an hour,

mayhap. This is deemed a religious performance. If one goes to his office on Tuesday and writes out a check to the order of the Charity Organization Society, is that a religious performance? If so, would it be a religious act to write a check to replenish the funds of Paterson strikers? Pure religion and undefiled before our God and Father has been described as visiting the fatherless and widows in their affliction, but does this include the widows and children of labor agitators? So even if we give up trying to define religion we are beset with difficulties when we try to distinguish between what we are inclined to call "religious" as over against things of this world, where such adjectives as holy and sinful seem inapplicable.

The word religion represents something that practically all those who have turned their thoughts to the matter regard as an essential to social and individual welfare; as the great and only barrier against moral corruption and intolerable anarchy. Nevertheless, they come to no agreement on what religion is, or even what things are religious. They agree only in thinking that those who differ from them have a false religion. St. Paul was sure that St. Peter was wrong; Luther denounced Erasmus; Calvin, Servetus; Kant could not stand for Voltaire's God; Huxley was certain that the Archbishop of Canterbury harbored fantastic superstitions. The author of *Troasm* sees no hope unless we give up the most fundamental elements of older religions and substitute recently revealed scientific discoveries in regard to human motives and their purposeful modification in the cause of righteousness.

What about false religion? It seems to abound, according to all accounts. Does its noxious falsity offset its precious religiousness? Writers often give the impression that they think religion in general essential and yet condemn pretty much everything that passes for religion among their fellow-creatures throughout the world. The Roman emperors are applauded by Gibbon for cherishing religions that suited the tastes and traditions of the various peoples of the Empire on the ground that they were all good and useful so long as they did not, like that of the Christians, preclude due respect for the imperial government and the goddess Roma. This seems a consistent recognition of the value of religion and the need of gracious toleration. It has not been the view promoted by Christians; yet something of the attitude of the Roman government seems to lurk in religious discussion today. It is urged, for instance, that religion is good for "the masses," even if their beliefs seem a quite absurd set of notions to the person who advances the argument.

In this welter of confused thinking it seems some gain to give up the idea that there is an entity or supernatural agency, religion, which can be discovered and defined. The case is at least somewhat simplified by resolving

religion into thoughts, beliefs, moods, revelations, scruples, judgments, and acts which take place under auspices which would be generally pronounced "religious" by participants or on-lookers. We cannot hope for any very precise agreement even on the basis of the older conceptions of religion, much less if one takes account of the newer developments to be mentioned in due time.

What has gone on and goes on under religious auspices, seems to fall into two rather easily distinguishable divisions. Santayana, who defines religion as poetry mistaking itself for science, distinguishes between primary and secondary religion. The first takes the form of convincing personal experiences, and peace and comfort, lifting of intolerable burdens, sense of security, relief from perplexity, active fighting for God and his righteousness and, ultimately, a fine sense of merging into the eternal. On the other hand there is a mere acquiescence, an unquestioning pursuit of sanctified routine-going to church, singing the appointed hymns, listening to the lessons or sermons, repeating the creed or litany, following the prayers, and greeting one's neighbors when the service is over. In Catholic churches there is more warmth and symbolism in the ancient ceremonies-the Mass, the resonant Latin, the ringing of bells, the swinging of smoking censers, and the richly garbed officiant. And it should not be forgotten that over two-thirds of the Christians of the world are either Roman Catholics

or belong to the Greek Orthodox Church. In the United States the Catholics claim about a fifth of the population.

Each one can come to terms in his own mind as to how much of his religion is primary, how much obedience to habit; in what respects he feels strongly, in how much he merely accedes and obeys. The range of varieties of religious experience, as William James names his book, is tremendous, from the light-hearted choir boy cheerfully chanting the recessional and looking forward to a Sunday dinner, to Saint John of the Cross in his cell, who sought to mortify joy, hope, fear, and grief; to deprive himself of every natural satisfaction and to imitate Jesus, as he thought, in repudiating everything agreeable.

III

We come now to the main purport of this chapter. What kind of new knowledge has placed the matter of religion in a setting so different from that in which it was conceived fifty years ago?

In the first place, a great deal more is known by European and American scholars of wide-ranging religious phenomena than was possible a half a century ago. Herbert of Cherbury, as early as the days of Charles I, denounced bitterly the provinciality of Christian controversies. He maintained that the belief in God and man's responsibility to him, in a future life of rewards and punishments, had existed among men everywhere and always—although this natural religion was fearfully disguised by priestly imposture. With the mastering of Sanskrit, of Pali, of Chinese, of Egyptian hieroglyphics and Mesopotamian cuneiform, and of Pahlavi, an incredible addition was made to the scanty stock of information upon which previous estimates of religion had been formed. Christianity took its place for the first time in a large group of still more ancient forms of belief, each with its venerable wisdom and teachings in regard to man's duties and fate.

During the period in which the comparative study of highly developed religions was progressing, travelers and missionaries were busy reporting the religious practices of wholly illiterate tribes in Africa, the Americas, Australasia, and the isles of the sea. These reports contained suggestions respecting the assumptions and myths upon which the more sophisticated religions had been built. This invited attempts to surprise primitive survivals in the early portions of the Old Testament, in the Vedas and the Homeric poems. And such attempts have proved highly successful; and disconcerting to older theories.

A second and rather unexpected contribution to the understanding of religious scruples, emotions, and aspirations has come with the recognition of the overwhelming importance of childhood; not merely the so-called childhood of races, but the childhood of each and every

man and woman. It has been shown that a great part of the general impressions which remain with us through life are gained in childhood and are never very seriously modified. As Mr. Trotter has pointed out, it is just those beliefs which were inculcated or absorbed in childhood which retain the most inescapable hold on us and which it seems perverse and unholy to question. This fact was not formerly recognized in dealing with religion. It is now eagerly grasped by many as the golden key for unlocking previously mysterious doors and seeing within them the forgotten survivals of earlier days.

The third and far more distasteful suspicion is that many extreme perturbations of human emotions, which have been deemed divine and holy manifestations of saintliness, suggest common enough dislocations and exaggerations which, if not cloaked with religion, would land one in an insane asylum.

In addition to the newer types of criticism suggested by (1) the comparison and interplay of other religions than our own; (2) the' recognition of highly primitive elements in all religions; (3) the reckoning with the survival of childish impressions; and (4) with the possibly pathological nature of mystic experiences, we should take note of two more novel factors in our efforts to assess religious matters to-day. There is (5) a historic trend toward secularization, that is, the reduction of the number of the thoughts and deeds of mankind which display themselves under religious guise; (6) the weakening of the old belief that religion is essential to right conduct in a worldly sense, for this seems to decline *pari passu* with the shrinking of the dominions of religion. Here we have six fairly new and at present very conspicuous considerations in handling those aspects of experience which are commonly called religious. These will be taken up in turn.

īV

It is obvious that whether one is engaged rather dully in routine religious practices or is filled with religious fervor he consciously or unconsciously refers his acts and feelings to a remote past. That is, without a substantial historic background he could neither act nor feel as he does. As it was in the beginning, is now, and ever shall be, lurks behind religious security. Accordingly, the recently developed study of comparative and, especially, of primitive religious phenomena is bound to make far clearer than ever before the heavy traditional element which is to be discovered in even the most novel formulations of religious beliefs. Veneration for the remote past, for the long-accepted assumptions, for the incomparable wisdom to be found in the sayings of ancient seers and in venerable books, are in all the more advanced religions-in India and China as well as in the Western World-primary in establishing religious faith.

Syncretism is the name given by historians of religion to the recombinations and blendings and modification of traditional elements which enter into all seemingly new religions. And, as Hatch, Reville, Legge, Harnack, Glover, Conybeare, and many others have shown, Christianity is in no way an exception. It is explicitly founded on the ancient religious beliefs of the Hebrews; but many tributaries which did not have their origin in the hills of Palestine augmented its stream during its development under the Roman Empire. The religious beliefs of the Hebrews had already been deeply affected by Mesopotamian and even Egyptian influences. Christmas and Easter, for example, far antedate, as festivals, their adoption by the churches.

It is assumed by most Christians, ignorant of history, that the teachings of Jesus were highly novel and that the prevailing of Christianity was so startling an event as alone to prove its divine character. Neither of these beliefs can be held by one familiar with scholarly books on these matters. There is a gap between the latest books contained in the Old Testament and the earliest writings in the New. This "period of silence" has been narrowed down to somewhat less than two centuries, by the recognition that Daniel, for instance, and certain of the Psalms were written in the second century before Christ. "But recent research," according to one of the chief scholars in this field, R. H. Charles, "has shown that no such

period of silence ever existed. In fact, we are now in a position to prove that these two centuries were in many respects centuries of greater spiritual progress than any two that had preceded them in Israel." A number of the religious works of this intermediate period still survive, "written probably for the most part in Galilee, the home of the religious seer and mystic. Not only was the development of a religious but also of an ethical character. In both these respects the way was prepared by this literature for the advent of Christianity." Jesus, it seems, was a son of his time so far as his views and admonitions are reported to us. Many of them can be readily duplicated or paralleled in the contemporaneous religious literature of Judea. The fatherhood of God and the kingdom not of this world had been already proclaimed. This discovery, be it observed, in no way diminishes the value or importance of the Gospels, it merely serves to reduce the miraculous and revelationary element in their origin hitherto claimed for them.

As for the spread of Christianity it was gradual, and turbid with the controversies between innumerable sects, calling themselves the only true followers of Christ. Harnack, one of the greatest certainly of contemporaneous church historians, shows how the revised beliefs spread to Jewish communities scattered over the Roman Empire. It will be remembered that Jesus addressed a terrible rebuke to the clergy of his time, reported in the

twenty-third chapter of Matthew. Among his many accusations was that "Ye compass sea and land to make one proselyte; and when he is made, ye make him twofold more a son of hell than yourselves." The Jews had far more missionary ardor than used to be supposed. If, as is now discovered, the teachings of Jesus were in accord with the advanced religious and ethical ideals of his people, his disciples, who accepted him as the long-expected Jewish Messiah, could find ready converts among the many Jewish communities throughout the Roman Empire. About three hundred years elapsed, however, between the death of Jesus and the effective acceptance of the new religion by Constantine. This was no prompt or surprising victory compared with that of the religion of Mohammed, which spread with really miraculous speed and exceeds in its adherents today all the Protestant Christians in the world.

v

But Christianity is itself a recent religion compared with all in the way of religious beliefs and practices which preceded it. Even the Old Testament, which in its earlier portions contains many primitive ideas, is recent compared with man's history. The belief in a soul, in the gods and their propitiation, in a life to come, are all so very much more ancient! The thoughtful Greeks and Romans were quite as "monotheistic" as the Chris-

tians through the Middle Ages. The Stoics often talked of "God"; it is true they used "the gods" too, which was equivalent to our "heavenly powers." Catholics accept a great number of beings which the Romans would have called gods—Christ, the Virgin, angels, archangels, and the saints to whom they appeal, as well as Satan and various other wicked spirits. The Protestants say less of the devil and his minions nowadays, but cling to the persons of the Trinity, and deny not the angels who surely are supernatural and Godlike beings, as the classical peoples would have estimated them.

Vestiges of what modern archæologists are impelled to class as religious observances are indicated by prehistoric remains and are reported from every known tribe of illiterate people whether in Melanesia, Polynesia, or the Americas. It would clearly be out of place to go into details in recalling the various classes of precautions which primitive people have been wont to take in dealing with the mysterious "powers" or virtues of things which they believed endangered or promised to benefit them. Animism came with the assumption of a sort of spirit or soul with its humanlike desires and purposes. Such a spirit could be lodged in animals and plants, stars and rocks.

All this, however, touches human nature so congenially that it needs hardly such lengthy disquisitions as are devoted to it. Solomon Reinach reports that as a child he had a blue shell which seemed to be a faithful protector. William James says that when the earthquake happened in California in 1906 it shook his bedroom as a terrier would shake a rat. Reinach's shell was an up-to-date fetish, and William James enjoyed the animistic dismay of a savage.

We still have our mascots and animal emblems, such as the American eagle and the two-headed, now extinct, Austrian bird. On any British consulate one can see the lion and the unicorn. These things are altogether too contemporaneous to seem very strange when we reflect that apprehensions and irrational precautions are not unlike in us all, and have been since culture began. We can detect tendencies to fetishism, totemism, animism, and the observance of taboos, with not a little lust for magic, in our feelings and sometimes in our behavior.

All these primitive elements continue to find religious sanction in one form or another although they tend to take a symbolic form. For example, savages are commonly fearful of the dead. They take elaborate precautions to prevent their return. The relatives may paint themselves black, and cautiously close all entrances to the hut so that the spirit may not recognize them or penetrate into the house. Lewis Browne finds here the traditional background of deep mourning and of closing the shutters of a house in which a dead person lies.

It is from primitive beginnings, ignorant and squalid

though they may seem to us now, that modern anthropologists believe that the higher and nobler conceptions of the immortal soul, of one supreme God, maker of heaven and earth, of salvation, heaven and hell, all must inevitably have originated. The visions of the night have played a great part in the creation of ancestor worship, which is of profound religious significance in India, China, and Japan, though singularly enough it has no such significance in the West. But in dreams one not only saw and talked to the dead but he might himself leave the body and wander forth and so realize that he had a double or spirit far freer in its movements than his heavy body. As he viewed the dead he could see that their spirits had departed.

As these discoveries which have come with the study of religions of today and yesterday are more and more widely known, in spite of the ignorance and expostulations of those who see in them a very real menace to the perpetuation of their particular beliefs, they will inevitably influence both the older and newer religious ideas. To the earlier defenders of existing religious systems the discovery that "Religion" was a universal characteristic of the human race came as a comfortable and efficient weapon to be used against supposed "atheists." They did not suspect that the new knowledge might influence their own particular faith far more potently than the talk of any unbeliever.

vi

Along with the examination of the religious beliefs and practices of primitive and ancient peoples has appeared another approach to the subject of religion. This has to do with childhood, when religious ideas and scruples are implanted. Once it was supposed that religion was the product of the mature and inspired thought of highly exceptional religious experts. Whatever contributions these may have made they are gravely modified by childish impressions derived from father and mother and such elementary religious instruction as reached us when children. The late Mr. Bryan exhibited through his life no more knowledge of religious matters than he could easily have acquired at ten years of age. Sermons of the commoner sort contain only what both preacher and audience accepted before they were grown up. Religion does not tend to mature in most cases. It is what we learned at our mother's knee. In later life we are preoccupied with business and amusement, and there is no time to keep up with the course of religious investigation, even if we had the slightest disposition to do so. The late Billy Sunday used to talk as a big husky boy to other boys and girls. Even distinguished scientific men, like Eddington, Millikan, Pupin, Osborn, and others, have solemnly discussed the relation of religion to science, when, if they but stopped to think, they would find that

they were assuming that they knew all about religion, without having given it much thought since childhood; although they would readily admit that after a lifetime's work they knew very little about science. Paul says confidently that "When I was a child, I spake as a child, I understood as a child, I thought as a child; but when I became a man, I put away childish things." Alas, this does not take place with many of us. Religious beliefs, we are early taught, are matters of simple faith and not subject to individual modification, rectification, or rejection—doubt is sin.

The very language of the Christian religion, as Everett Dean Martin and others have suggested, is that of the family. We are all God's children. There is the Heavenly Father and, among the Catholics, the pure and devoted Mother whose arms are open to those who call upon her; Christ is the son and elder brother.

To all the timid and sensitive as well as to the downright "sick souls" life is beset with menace, self-reproach, perplexity, disappointment, bereavement, the sense of illusage, and sometimes with the keenest and most poignant suffering. We hunger for a defender and protector and one who will right our wrongs. We thirst for assured tenderness and love in a hard and fickle world. We long to rest in some one's loving arms, to return to our mother's bosom and have our tears wiped away. We

become children and fall back on the child's hopes of comfort and reassurance.

But the solaces of religion are not confined to moods of apathy and suffering; it meets our requirements for glory and ultimate victory, for successful conflict and the utter undoing of those who have refused to open their eyes to the light vouchsafed to us and ours.

The faithful will join the divine cohorts, and be participants in the final conquest of evil doers, and reign forever. What heart so torpid, whether of believer or unbeliever, that he can, without heightened beat, read:

> The Son of God goes forth to war, A kingly crown to gain: His blood-red banner streams afar: Who follows in his train?

VII

Religious moods in rare cases take on an intense, obsessive form, in which mystic intimacies with God or the Saviour occur. There may be ecstasies which the subject does not think of as religious; but there are scattered through the history of Christianity (as well as the history of primitive religions) instances of absorbing interest in which the saint finds himself ineffably one with the divine. Special works are devoted to mysticism, of which William James's *The Varieties of Religious Experience* is one of the altogether most remarkable.

It is impossible to take up these unusual instances of saintliness. One unfamiliar with the literature will be shocked and repelled by many of the experiences reported. Modern psychiatrists will readily resort to hysteria and sex-repression to dispose of some of them. They are to be found at almost every level of culture and are connected with artificial intoxication of various kindsfastings, stimulants, narcotics, excessive exertion, macerations-but by no means always. In solemn ecclesiastical conclaves mystics have been canonized and beatified long after their death. We may leave this phase of religious phenomena with the suggestion of Professor Leuba, that it may be that the ideas of the "divine" were derived from what the "possessed" person did or said, as in the case of the Pythian priestess of Delphi, who wrought herself into a frenzy before she delivered her oracles. One's assessment of mysticism will always depend fundamentally on whether he is looking for divine revelations or is not. I take it Professor Leuba is not, whereas Marguerite Marie Alacoque, born in 1647, knew that Christ had told her most simply and directly, "I have chosen thee for my bride."

I infer that a good many persons have some kind of mystic experiences during their lives. Dreams often seem revelations. So as in almost all cases there are intimations in usual human experience of those things that appear in more grandiose fashion among the few. James's discussion of asceticism was very ingenious, but more recent psychopathological studies have gravely altered his somewhat antiquated analysis and evaluation of mystic phenomena. In general the Protestant sects are much less hospitable to reports of saintliness than the Catholics. They seem to feel that God reveals himself in less spectacular fashions.

VIII

There is a persistent claim, often finding expression even today, that idealism, morality, decency, and fairness depend upon and are re-enforced by religious beliefs. No one thinks that the godly are always good, but only that the godless have thrown off the restraints which hold them back from a life of heartless self-indulgence and wicked disregard for the rights of others. The relation of religion to ethics is a far more obscure and intricate question than would appear at first sight. That at least may be safely said. There has been much of a religious nature in the past which had to do merely with prudential measures in making terms with gods who were themselves no better than they should be, and with fighting off devils. Then the Christian theologians have disputed much over "good works"; and Calvin taught the Presbyterians to hold that every man and woman was predestinated before the foundation of the world to heaven or hell, without any reckoning with his earthly

conduct. The number of the saved and damned is, according to the Presbyterian confession of faith "so certain and definite that it cannot be either increased or diminished." Yet Presbyterians are not conspicuous either as saints or sinners in spite of their theory of the hopeless irrelevancy of daily behavior to salvation.

IX

There is space here available for only a few observations on the modern phases of religious faith and works. They would seem to be drifting apart. Careful observers detect an unmistakable tendency toward the secularization of human affairs. That is to say, less and less goes on under religious guise. So rich and varied and everchanging are human preoccupations today that it is impossible to bring them within the ancient religious categories. The per cent that seems in accord with God's behests, or in violation of them, tends to decrease.

Modern physicians do not assume that the devil is at the bottom of disease; they do not resort to prayers and exorcisms but to serums and the knife. The provisions of the *Rituale Romanum* for dissipating an approaching storm would seem futile to most of our countrymen. Treaties between nations are no longer concluded in the name of the Holy Trinity as they were a hundred years ago. No one would longer justify Negro slavery, as did the Southern clergy before the Civil War, on the ground that Noah had cursed Ham and his offspring for making light of the old man's drunken relaxation. These examples might be multiplied indefinitely. So it is clear that not only have modern business corporations failed to assume the religious tinge of the medieval guilds, and telephones and motor cars to ask for religious sanction; but many previously heavily sanctified affairs of life have become secularized. It is this worldly tendency that has created suspicions with regard to the older claims that the supernatural directs and controls human improvement.

A Brooklyn clergyman, Richard Storrs, whose learning and eloquence would overwhelm the most wary, wrote a large book over fifty years ago on The Divine Origin of Christianity Indicated by Its Historical Effects. Further increase of knowledge and less eloquence has produced reservations in the minds of historical students. But such reservations are easily countered if one accepts the Reverend Dr. Storrs' warning that Christianity, like the sun, may be hidden at times behind thick clouds. "It may seem grotesquely or hideously tinted, by steaming vapors rising to intercept it from forges and factories, from chemical laboratories, or from the noisome reek of slums. But these pass away, and the sunshine continues: the same today, when we untwist its strand into the crimson, gold, and blue, as when it fell on the earliest bowers and blooms of the earth."

Warming to his argument and the unfailing abundance of incontrovertible evidence as he comes down through the ages, Dr. Storrs closes triumphantly, "Whatever may be our just criticism of modern society . . . it seems almost impossible to doubt that the religion of Jesus is at this hour the commanding factor in whatever is best in the character and the progress of persons and states. It has not merely rectified particular abuses, removed special evils, exerted a benign and salutary influence on local institutions. It has formed and instructed a general Christian consciousness in the world, which is practically ubiquitous and commanding in Christendom: to which institutions, tendencies, persons, are more and more distinctly amenable; which judges all by an ideal standard; to which flattering concessions to wealth, to power, to genius or culture, are inherently offensive."

It was, as Dr. Barnes has shown in his restrained *Twi-light of Christianity*, easier to write these lines in the early eighties than it would be now. The crimson, gold, and blue have been notably obscured in the years that followed. But flattering concessions to genius and culture have at least grown no more servile in the twentieth than in the nineteenth century. This seems the only striking instance of the constancy of Christian influence.

To claim, however, that the disappearance of witchcraft and slavery and the introduction of religious toleration were the effects of Christian teachings seems not to

stand inspection. In his Jesus or Christianity? the Rev. Kirby Page has made this painfully clear. The leaders of the various churches have most rarely raised their voices against what seem to us now ancient and happily extinct atrocities. They were not the ones who did away with them. On the contrary they very generally supported religious intolerance, accepted slavery, blessed war, and cursed those who suspected the gloomy deceptions of witchcraft.

The clergy have not been ethical innovators. Leo XIII in 1891 summed up what until very lately has been the theory of the Protestant churches, not alone the Catholic. Labor is the painful expiation of sin, the rich and the poor are ordained by God to maintain the equilibrium of the body politic: "To suffer and endure, therefore, is the lot of humanity; let men try as they may, no strength and no artifice will ever succeed in banishing from human life the ills and troubles which beset it."

However, in preventing strife between rich and poor and making it impossible, the Pope continues, "The efficacy of Christianity is marvelous and manifold. First of all there is nothing more powerful than religion (of which the Church is the interpreter and guardian) in drawing the rich and poor together, by reminding each class of its duties to the other, and especially the duties of justice."

One sees slight evidence in the account of contem-

poraneous labor disputes that issues and adjustments turn often on the marvelous and manifold efficacy of Christianity. Nor have they in the past. When the German peasants in Luther's time drew up their twelve godly articles based on evangelical fairness, Luther sided not with them but with the possessing class, and urged them to use all bloody measures necessary to put down the rebels on the ground that "they deserved death of body and soul many times over."

When we come to daily observations we cannot distinguish between the believer and the unbeliever by his conduct, by his honesty, generosity, and other homely virtues. Bradstreet does not reckon with religion in establishing one's credit. The custom house official would not pass unexamined the luggage of one professing the Athanasian creed or submitting a certificate of good standing in the Brick Church. The rain continues to fall on the just and unjust alike; and Jesus asks, in a passage almost universally neglected by his followers, whether anyone supposed that those on whom the tower in Siloam fell were "offenders above all men that dwelt in Jerusalem." As late as 1897 the horrible fire in a Paris charity bazaar was attributed by a French priest to God's vengeance on those who rejected the teachings of the Catholic Church. But in general this primitive notion is on the decline. It was not widely urged when San Francisco and Yokohama were desolated by earthquakes.

These horrors were generally accepted as the result of geologic faults, not as "acts of God." Scientific knowledge has spread far enough to discredit the older cosmology. As Samuel Butler says, it was not hard in his boyhood for the ordinary English clergyman to think of God's molding Adam in the rectory garden, and retiring to the greenhouse to form Eve. Those who cling to a heavily anthropocentric universe have now to alter their lines of arguments. Henry Drummond set this example late in the nineteenth century.

It has become apparent that there have been many, many elaborate systems of religious belief, of which the various Christian churches and sects afford modern instances. It is not the aim of this chapter to appraise these as to the truth and value of their claims. It is possible to have hopes and aspirations to which none of them have assigned a prominent place-for example, the increase of human knowledge and imagination as over against ancient dogma. The effort to engineer life in the light of already existing intelligence would in itself be perhaps as holy a task as any hitherto essayed by saint or martyr. Contrasting St. Anthony's fierce struggles against temptation in the Egyptian sands and the ideal community described by Rabelais, where desire merged into prompt fruition, Havelock Ellis wisely closes his Dance of Life with the suggestion, "How vast a field lies open for human activity between the Thebaid on one side and Thelema on the other."

CHAPTER XII

EVER LEARNING

E DUCATION is another name for man's life, so far as it is really human and not merely animal and vegetative. It is the outcome of experience in all its incredible variety. Hope and fear, joy and sorrow, success and frustration, sympathy and resentment, are our teachers; they never shirk their tasks nor fail in their influence. They smile and frown, encourage and reprove from the cradle to the grave. Like other teachers, they are often bungling and perverse, cruel and unfair, breeding lethargy or despair as well as new power and insight. Compared with them, the teachers of the classroom sink into a secondary place.

In a thoughtful book¹ Mr. John Palmer Gavit hazards the estimate that no more than a quarter at best of our up-bringing can be credited to those who conduct formal education, sitting behind desks, plying text-books, and springing disconcerting questions upon children and youths. Of "the totality of educational result" he suspects that for those that go through college, a fifth may be ascribed to the schools and but one-twentieth to the

¹ College, by John Palmer Gavit, Harcourt, Brace, 1925.

college. The balance he would seek in what he calls "the home" by which he means all experience outside the classroom. We need not stop to question these ratios, to which Mr. Gavit himself attaches no more than an illustrative importance, before accepting the fundamental importance of this general assumption. In short, Mr. Gavit places college in the midst of living, and that is where it belongs. Mr. Gavit's work is so important and sensible that we may well use it as the basis for launching a discussion of the major issues of higher education in our day.

The late Herbert Ouick once said that we are well past middle age when we are born. During our first ten years the foundations of our permanent beliefs and general estimate of human relations are fairly solidly laidwitness the case of the late Mr. Bryan and his sympathizers, who stoutly continued to adhere to the indoctrinations of childhood and whose later knowledge only served to reinforce the results of their "home" environment. In school the teacher must avoid, under penalty of dismissal, any questioning of the generally accepted religious, patriotic, and moral assumptions prevailing in the community. So when the boy or girl reaches college it seems reasonable enough to suppose that his views are hardly likely to expand or clarify themselves by more than a twentieth of their previous mass and quality. Sometimes, of course, college brings with it a sort of

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conversion, but William James has shown that conversions, if they be more than emotional incidents, are the outcome of long preparation.

This helps to explain the prevailing disappointment among observing college teachers, and critical students and parents, over the seemingly meager results of going to college. We expect more of the colleges than it is possible for them to realize under existing circumstances. And yet there can be no doubt that their influence could be far greater than it is were the situation fully grasped by parents, students, and instructors. Mr. Gavit's book seems to me far the most penetrating and sagacious description of the situation which I have ever met. It cannot be denounced by the most stodgy as "muckraking"; and such "debunking" as he executes is carried out with a light hand.

In order to escape from its present limitations he would have the college direct its main attention to a duty which is almost certain to devolve very soon on most of the college boys and girls—namely, parenthood. He does not mean by this merely "home-making," but all that goes to rearing a more intelligent generation than the last. Having this in mind as the sum and substance of his conclusion, he takes up the various topics of discussion which his general theme invites.

His first precaution was to learn a great deal more about what happens in college than most writers on the

subject. He visited many institutions, large and small, East and West and South and North, for males and for females, and for both together. He talked with all concerned, from the president to the freshman and the prospective freshman. His first chapter on "What Do You Expect of College?" gives under ten headings the various surmises of both parents and students. These may be summarized as follows: the idea that having "been to college" will afford a running start in business; for fun and the making of "desirable" contacts which may stand one in good stead later; for the perpetuation of dad's recollections of the college yell; for the continuance of a solicitous oversight and protection; for the certification of the *élite*; for learning a profession or trade; for the confirmation of home prejudices; for the training of experts and teachers; and lastly, the preparation in an atmosphere of intellectual freedom "for effective participation as a responsible adult in the world in which he lives, in all ways as an intelligent active member in his community, his nation, and the fellowship of nations. For going on with the task of self-understanding, selfgovernment, and self-development in the life that now is, and for the life that is to come."

Whatever may be the divergence of opinion in regard to the first nine motives for going to college listed by Mr. Gavit we can all shake hands on article ten. The late Rev. John Roach Straton, Mr. Mencken, the late Dean West of Princeton, John Dewey, and Upton Sinclair would join in a common blessing upon this high ideal. The college should turn out good and efficient men and women equipped with knowledge and lofty aspirations and prepared to take an active part in making the world better. Indeed, one of our greatest difficulties in reforming our college ways is the pious unanimity in regard to the purpose of the higher education. It conceals and disguises the most divergent notions in regard to the nature and making of upright men and women and good citizens. According to the dying words of Mr. Bryan, the stalwart yeomen of Tennessee, uncontaminated by college education, are the very best judges of the proper relation of religion and scientific research. Dean West defended the old faith, was sure that the works of the Greeks and Romans, and the struggle to attain a highly imperfect acquaintance with their respective tongues, contribute more than any other method to the forming of judgment and taste and a preliminary acquaintance with life and duty. Mr. Sinclair would feel that no education began to attain its end without tearing from capitalism its purple and blood-stained robes. Hundreds of scientific men would recommend the methods of scientific research as the best corrective to human perversity. Some of those who have had long experience in educational work might agree with Mr. Gavit that the discreet and effective showing up of revered prejudices, including the sacred dogmas of all the frantic simplifiers of human riddles, should be at least one of the main precautions to be taken in our efforts to make a good man out of a college boy.

In his chapter on "Religion and Radicalism" Mr. Gavit says that he finds no organized propaganda in the colleges directed either against religion or towards so-called radicalism—the precise meaning of which remains in doubt in his mind and in that of all thoughtful people. Some years ago the late Calvin Coolidge found that the "reds" were stalking the women's colleges. They appear to have given up stalking now; at least Mr. Gavit did not catch them at it. "At every college I was looking for something that could be called definite propaganda of 'radicalism'; such, for example, as extreme communistic socialism, sovietism, the so-called 'dictatorship of the proletariat,' the 'class struggle,' 'advanced' views on the subject of sex-relations. I did not find it."

He did find here and there in the departments of biology, psychology, and philosophy, a tendency toward "a sheer systematic materialism," which, as he describes it, appears to me quite alien to the representatives of biology, psychology, and philosophy whom I happen to know—and I know a good many. I never met one of the variety he pictures. There is surely at least as much humility in these departments as in any other. Mr. Gavit mentions one particularly offensive case and I suspect

took this man as an excuse for a gesture of scorn when he encounters those "in the departments whose subjects of study come nearest to pure guesswork, where men, bushwhacking around the edges of the inscrutable, pontificate about the week's gropings in the realm of mind as if they had ultimate truth by the tail." Ah yes, they should be hung, *me judico*. Now the drop has fallen, I can imagine Mr. Gavit smiling and taking up his genial pen once more.

In regard to the great problem of how to make college education fundamentally important and at the same time avoid "controversial" matters, which are usually just those best worth understanding, the writer says: "The only thing to do is what the best young-minded educators are doing; to welcome the spirit of challenge and inquiry, and lead it to the assimilated knowledge which is the sole safe guide for permanently valuable action." At this point Mr. Gavit makes a pertinent quotation from Professor Harry Overstreet, respecting one of the unmistakable aims of college education and one of the most neglected and hardest to reach:

What, then, is the eager-minded student to do? ... Grow the habit of critically examining basic assumptions. There are basic assumptions everywhere—in the newspapers, in business, in churches, in the home, in politics assumptions that underlie the things that people think and believe and do. The first step towards gaining an intelli-

gent grasp of one's world is to discover and to question these basic assumptions. That is what the world, despite itself, is forced to be doing today. It is at work with a number of the assumptions that almost brought our civilization to wreck. What are these assumptions? Why did they almost wreck our civilization? What are the new assumptions that must be formulated and believed if a wholesomer civilization is to be achieved?

As things are now I find myself little interested when I meet new people or address audiences as to whether they have had a college education or no. It seems to make so little difference in one's general outlook and frame of mind. It should be otherwise. Four years in college should cultivate intelligence and open-mindedness in a sufficiently marked fashion to be easily noted. In most cases the college graduate appears to have undergone no greater alteration than might well take place had he passed the previous four years amidst the vicissitudes of non-academic youth.

Mr. Gavit describes a new movement in a very few of the colleges which consists in giving, during the first year, a sort of orienting course to which representatives of a variety of departments contribute. This is an excellent notion so far as it goes. But there is danger that the course will be crowded with statements by instructors who are too departmental to produce a fairly coherent impression. Had I my way I should have a close con-

spiracy of instructors who should enjoy at least half the attention of the students during the whole four years and whose business it should be to realize the aims so well set forth by Professor Overstreet and approved by Mr. Gavit. The great departments of human interestespecially religion, business, the relations of men and women, education and civic responsibilities-should be all subjected to analysis and criticism in regard to their nature, origin, and present status. In the usual departmental divisions of a college or university it is quite possible, in spite of so-called introductory courses, to miss most of the deeper significance of our knowledge and customs. Those who conducted this proposed enterprise in general sophistication would have to be peculiarly qualified, peculiarly friendly and coöperative. They might also have to put up for a while with the jeers of those who, having no knack for this kind of thing, might cry, "smattering." For it is no easy task to give a college course meaning beyond the mere statement of a series of facts in this field or that; and it is so very easy to plod along without asking the embarrassing question, "How much is being learned and what imaginable good am I doing beyond winning a rather scanty livelihood?"

As was said at the start, Mr. Gavit puts college into the midst of life. He sees that one goes on living in a rather miscellaneous fashion even if he is spending a part of his time in study and in listening to lecturers. So a

good deal of the book has properly to do with "The course in sportsmanship," "extra-curriculum" activities, the ratings of achievement, the attitude and precautions of the college administration, especially the rôle of personality and sympathy in adjustments to individual cases.

I suspect that the newest element in college affairs is the awakened students themselves. When I went to college no one blasphemed against the educational process; now many students cry out on the futility of the whole thing as they find it. Some day it may be realized that the tastes, inclinations, and judgments of the students should be looked to as a potent reforming element in bettering matters.

Whatever our differences with respect to the content and methods of higher education, we can at least agree that it should improve our taste and manners, and enable one to make the most of his leisure moments. But our colleges and universities have fallen down badly even here. Seven centuries have elapsed since the earliest of the European universities were well under way, and yet a discreet teacher may still diffidently refuse to attempt to state the specific purposes of a college course, to say nothing of estimating its actual results in practice. The elective system is, at bottom, a modest acknowledgment that mere *laissez-faire* is likely to produce happier results than the most cunningly devised scheme of the educational expert. If after centuries of experience we are uncertain as to the import of higher education for men, we may well hesitate even to guess what modifications of our present scheme of study will be necessary in order to meet the peculiar needs of the woman student, who has been in existence scarcely more than a quarter of a century.

The adjustment will come, I believe, not so much by taking thought, as through the subtle working of the present plan of permitting a student to choose his own studies. Our first and obvious duty is, therefore, so to broaden our program of study that it will embrace all those great fields of human interest of which the college can take cognizance. After we have done this, we may assume—provisionally, at least—that goose and gander should be served with the same sauce.

Hitherto, however, we have neglected and sometimes completely overlooked one of the most important of human preoccupations. In the clumsy traditional justifications of the college course—e.g., intellectual and moral discipline and preparation for a successful career—no account is taken of one great and important result of a truly adequate education, namely, the successful pursuit in after life of the highest and most enduring forms of pleasure. A scheme of study which does not afford an opportunity to develop and cultivate the beautiful in all its forms is obviously imperfect, whatever else it may offer.

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Higher education has, however, been conspicuously wanting in just this requirement. During hundreds of years its essence was supposed to consist in the careful weighing of the apparently conflicting dicta of accepted authorities; for, as Abélard has it, this "stimulates in tender minds the greatest anxiety to come at the truth and is a practice which renders them more and more acute." This idea dominated education for centuries. But with the renewed appreciation of the Greek and Latin classics, not only did a new kind of wisdom come into esteem, but along with it an æsthetic element. Sapientia found a companion in Eloquentia. The recent development of the natural, social, and historical sciences has undermined confidence in the adequacy and finality of the long-accepted theory of a liberal education, and has at the same time greatly broadened our scheme of study, but there has been an obvious and lamentable failure to secure a proportional increase of opportunities for the study of the beautiful in its various forms. Eloquentia still holds its own and receives due recognition in the study of modern literatures, as well as those of ancient times.

With the exception, however, of the artistic in literature, the beautiful is pretty generally neglected, sometimes totally ignored in our college programs. At Harvard, it is true, the fine arts are dissociated from the technical preparation for architecture as a profession, and are presented to the college student at large by scholars as eminent as those who deal with literature, political economy, the classics or natural science. But this admirable sanction of the equipollence of the artistic is exceptional. Many of our smaller institutions boast a "Department of Fine Arts," but it rarely ranks with the older courses, and in some cases appears to be due to that ill-considered anxiety for nominal universality which would include china-painting and the banjo among the subjects of instruction, rather than to an enlightened recognition of the true place of the artistic in education.

If we can inculcate, as we flatter ourselves that we can, a love of righteousness and truth, we may surely be justified in the hope of promoting, by appropriate instruction, an appreciation of the higher aspects of the beautiful. In a former number of the Columbia University Quarterly, Professor Wheeler has pointed out the great advantages which Columbia enjoys in the magnificent Avery library, in the collections of the Metropolitan Museum and in a growing enthusiasm for the artistic which must be apparent to any observer of our great city. Unfortunately, these advantages are not more conspicuous than is the absence of any instruction or encouragement in the use of them, apart from the study of architecture or archæology. Let us recollect that a college course is clearly an amenity, in the highest and best sense of the word, to an ever-increasing number of

students, especially among women. We need not hesitate to prepare our students to exploit life's noblest pleasures. A notable advance was made years ago in the establishment at Columbia University of a department of music, under the guidance of America's most distinguished composer. May we not look forward to the speedy opening up of other fields of art to the students of every selfrespecting institution of higher learning? In no other way can we work more certainly toward the discovery of the best course of study for young men and women, than by offering educational opportunities as nearly as may be conterminous with our normal life itself. And greater attention to the fine arts will also contribute notably to the solution of the problems connected with that increase of human leisure to which we shall call attention in the remainder of this chapter.

Π

Nature makes little or no provision for leisure. This is man-made, the by-product of his ingenuity and accumulations. Nature wots well of weariness and sleep, apathy and the stillness of death. She can tell us how to watch and wait and slumber, but she has no other suggestions to make about filling in those intervals when the urgencies of mere living relax for a time. She has seen to it that her program should usually be full, although the numbers are few and constantly recur. The tiniest

of her children are often the busiest. Day and night the minute ciliates and rotifers are stirring up their vortex of water to draw in the wherewithal; and the various chasers are dashing about. There are the larger creatures which we can see without the microscope-the trappers for example, the spider, and the ferocious "doodle bug," setting their snares and awaiting their prey. The communistic bees and ants are ever on the job. There are, to be sure, drones in communistic circles, in spite of Prussian regimentation. There are unnumbered parasites within and without, uninvited guests who may or may not wear their hosts to death. But even these loafers and exploiters do not have to face the menace of leisure. They bore not; neither are they bored. They feel no obligation to improve their minds or better their worldly lot by taking "success" magazines, contemplating their noble examples of success, or strengthening their will with some "psychological" elixir.

Men and women have always had to meet the needs common to all animals great and small, and this necessity has required almost all their time and strength. Hunting, fishing, planting, and reaping, with the concomitant skinnings, grindings, and seethings; guarding their bodies from the unfriendly moods of the elements; repelling enemies and getting under way a new generation of self-supporting slaves, artful dodgers, and procreators—these are the obsessive essentials of survival. They form the indispensable basis for all further human adventure, and demand constant watchfulness and replenishing.

This is the natural and inexorable bondage of life from which man can never escape. But he has shown that he can lighten his burden by clever contrivances and thus leave leeway enough to develop wholly novel and unexpected potentialities which he gradually discovers in himself, but which were long obscured and repressed by his lack of skill in meeting his bodily needs. When granted the necessary time, he can wonder and gratify his curiosity by a sublimation of his familiar hunting enterprises. This process has grown at last into modern scientific research, which was preceded by many gorgeous guesses in regard to the origin, order, and destiny of things. Man found time for carving gracious designs upon his implements, for adorning his person, his temples, and the houses of his rulers. Behind all these things is his longing for things that never yet were, das Niedagewesene, which he in time came to call his ideals and aspirations. He is increasingly dissatisfied with the notion of merely meeting present exigencies and establishing his offspring in the old ways with no chance of their doing more than reduplicate his own life.

These reflections are, I am fully aware, quite commonplace, but we often neglect them in our impatience with human routine and stupidity. The great mass of

mankind has hitherto been bound to the soil or the shop, and commonly in a condition of legal bondage to other individuals or groups of individuals. Men have been stupefied by unremitting overwork, whether it be in China, India, Russia, or our Western World. There are exceptions and reservations to be made in this statement, but it is in general true and inevitable when we consider man's background.

Such leisure as mankind has until very lately enjoyed has been confined to the young, an unavoidable concession to their weakness and inexperience. Youth has been the period of learning, usually in a hit-or-miss fashion. Children tumbled up, discovering things for themselves and from their companions, assimilating the prejudices of their elders, and in due time shouldering the burden of work. They continued to learn a little in later years, but not much. Forcing learning on the young by means of schools and schoolmasters is a rather modern innovation to be traced back here and there three thousand years, perhaps a little farther. Only very lately have schools come to be taken for granted among all so-called civilized peoples. The chief result of these has been to impart to almost all the inhabitants of western Europe, North America, and Australasia the magic art of reading. The printing-press, with the encouragement of its mistress, advertising, now quite outruns any possible demand of the reading eye. Things to read are thrust upon our

attention at every turn. We are put for life in communication with the quick and the dead. The possibilities are limitless. We have only to make our choice.

The leisure formerly confined to childhood (and old age) is now expanding rapidly. Robert Owen, toward a hundred years ago, declared that the application of mechanical devices in spinning and weaving was already equivalent to giving the workmen each nine slaves to aid them. The Iron Man has greatly increased in strength since Owen's time, and gasoline and electricity replace human muscles. Just the other day the American Federation of Labor discussed the possibility of a thirty-hour week. This means that a fourth of five days should be spent in toil and that there should be three whole days of leisure in seven, or more than a hundred and fifty each year. If some of this time could be devoted to meditating on Stuart Chase's Tragedy of Waste or Harold Loeb's Chart of Plenty, those in the more favored industries might look forward to such a reduction of stated work that even with our present undeveloped resources leisure would become a serious question.

"Leisure" is perhaps too elegant a term to apply to spare time. Other names may be given to intervals of unemployment, such as loafing, idleness, bumming. The church recognizes the cardinal sin of *acedia*, sullen sloth, about which Aldous Huxley has written so charmingly. Then there is "re-creation"; and as we stumble upon

this word, it suggests a new line of reflection on using spare time to make ourselves over gradually and agreeably, when once we grasp the rules of the game.

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The changing economic conditions recalled above, along with the accompanying fresh possibilities and aspirations, underlie the talk and planning and experiments which, especially during the past ten years, have been summed up under the heading Adult Education. Toward the end of the war the first British "blue book" appeared upon this subject, and an international association under the headship of Mr. Mansbridge was formed. The Workers' Education Bureau in New York is in fraternal relations with the A. F. of L., and the Carnegie Corporation has been taking account of stock in this field. Numerous forums have sprung up, following the lead of the People's Institute. Among earlier movements the most influential has been University Extension, originating in England and transplanted to the United States about 1890. This movement has led to a wide diffusion among adults of the courses offered to undergraduates in colleges and universities. The object has been the rather naïve but inevitable one of offering to those who had escaped college some belated savor of the succulent fruits which the collegian might enjoy.

But meanwhile, especially after the war, the boys and

girls, and even a college president here and there, began to suspect that the prized fruit had lost its quality and tended to turn to ashes. So the bottom threatens to drop out from University Extension and all those forms of adult education which assume that the prevailing education for the young can be carried over without question to the aspiring adult.

We have not yet learned to combine recreation and re-creation. The colleges afford opportunity for plenty of recreation of the more obvious and primitive type. This is not their avowed purpose. Their representatives talk of molding the character of the young, fitting them for life, broadening their outlook, but nevertheless they are not intent upon any thoroughgoing re-creation of mood and aspirations. The chief function of a college is to impart information with no great attention to its bearing upon intelligence and conduct. It usually fails to transform the student's attitude toward himself and his surroundings, although this is obviously what he most needs in our period of rapid change. Education as now organized can scarcely flourish without the support and approbation of current opinion-often of the baser sort. It is consequently averse to re-creation. The boys and girls must emerge from college without signal indications that they have deserted the moral, religious, political, or business standards of their elders.

While the recent sporadic revolt of college students

against the traditional methods of education is encouraging, it is bound to be seriously hampered or blocked by the unintelligence and timidity of parents and trustees. So it falls out that progress in education for both young and old is really a single problem. Could adult education be directed into new and better ways, it would remove in time the constant fear of public reprehension under which our more clear-headed instructors and educational authorities now groan.

In II Timothy, a brief tractate of dubious origin which happened to be included in the New Testament, there occurs among many worldly-wise observations a reference to those who are "ever learning and never able to come to the knowledge of the truth." Now the truth was in all probability to the writer what he and his associates happened to believe. And this is the truth to all of us, unless we can achieve a state of mind toward which I believe it is the very essence of all education to approach as nearly as may be. It seems as if truth could be no more than tentative and relative, taking the form of useful and beautiful patterns which may in time fade, disintegrate, or lose all value, owing to subtle changes in ourselves and our surroundings.

For example, it seems to me to be the truth for the moment that information is to be had in overwhelming quantities, but that most of it is indigestible and incapable of undergoing the ultimate and essential process of metabolism which might re-create us. The traditional aim of education has been to impart knowledge, with the often quite unconscious but ever present design of substantiating or at least leaving quite untouched the prevailing notions of righteousness and propriety. Now the kind of knowledge that is at present piling up tends to question or even indict rather than confirm the older standards, acceptances, and faiths in regard to religion, politics, business, morals, race, crime, and the intimate relations of men and women.

If this be true, it would seem to be the proper aim of adult education (which is freed from some of the prudences and disguises supposed to be wise in dealing with the young) to revise childish impressions that have held on, owing to lack of time to overhaul them. As leisure and opportunity increase, more and more people will set themselves to modifying, in the light of new information and conditions, their immature perspective, prejudices, and general estimate of themselves and their surroundings. These, as things now are, continue to stand by us or reëmerge inconveniently our whole lives long, although they originated in the guesses of a child or the misapprehensions or convenient misrepresentations of adults. We now know that the young are much older than was formerly assumed, and that the old are the victims of infantilisms which pester them and their associ-

ates through life. Our present educational devices fail to take advantage of the maturity of the young or correct and discredit the babyishness of the old.

IV

Fresh information, if allowed free play and unvitiated by stubborn scruples, prejudices, principles, and rationalizings in the interest of comfortable convictions, is bound to affect one's mood and outlook. I have a strong distaste for virtuous homilies and moralizings, which, like Mr. Roosevelt's "weasel words," suck the blood out of fuller knowledge and leave it to die.

Nowadays we talk much of the human adventure. This is a hopeful sign. Education whether for young or old, except that directed to some special art or profession, should shed light on the nature of our pilgrimage. It is no longer what Bunyan had in mind. Christian, when questioned by Mr. Pliable in regard to the ultimate rewards of the journey, had to admit that it was easier to imagine than describe the bliss of the Celestial City, but that at any rate they would enjoy an unobstructed view of the cherubim and seraphim and of the four-andtwenty elders. The prospect was too vague and illusive to make much impression on Mr. Pliable. After sloshing about for a time in the Slough of Despond he prudently regained the road leading back to the City of Destruction. There is no record of how Christian felt after a

hundred million years of casting down his golden crown upon the glassy sea.

The almost inevitable reduction of our hopes and securities which comes with increasing years is usually called disillusion. But why not call it insight? It might include agreeable as well as disagreeable discoveries. Enlightenment might bring really greater security because less subject to rude impacts and dislocation than the older blind and rigid faiths which ran quite counter to honest experience.

It would have been hard to shock Euripides, Lucretius, Montaigne, Shakespeare, or Goethe. They represent the highest type of adult education. Mr. Wells' *William Clissold* might be said to light the way to a genial reconciliation with things as they just now seem to be in our present incipient stage of knowledge. Then Havelock Ellis, who has the honor to be ranked by Mr. Mencken as the most civilized of mankind, has given us in his *Dance of Life* a picture of the Celestial City so far as it can now be adumbrated.

In setting this highest aim for adult education, I am aware of a certain grotesque impracticability about it. It will seem downright offensive to some readers. As I noticed recently the faces of those celebrating in procession the achievement of Columbus, I wondered whether a combination of the happiest circumstances and the most favorable influences and the most sagacious guid-

ance could ever have made them relish any of the writers I have mentioned, let alone follow in their footsteps. Yet it does no harm to dream of things that are not, nor likely to be.

Education should be directed to sophistication, gentle and tolerant, and to reconciliation, rather than to ascetic sacrifice. The amenities and incredible achievements of mankind and the wonders of nature are apt to escape us, for, owing to our animal extraction, we are usually sensitive only to the outs of things. We overemphasize the mordant acidity and exaggerate the disappointments and bewilderments of life. Touchiness to discomfort is, as I have said, an animal trait which it should be our business to overcome as a part of the disreputable and inappropriate elements in our heritage.

Without being moral or sentimental or mystic, I agree with Mr. Wells that the trend of affairs today is toward the re-creation of man into what can safely be called a better and wiser being. "As our mental range increases we realize that in the end frustration and extinction await everything that is purely individual in us. We are beginning, some of us, or even most of us, to develop a further, a more fully adult mental age. This adult mentality of the years ahead will be self-neglectful and scientific and creative in comparison with anything that has gone before. It will be consciously and habitually a contributory and coöperative part of the over-mind."

And Mr. Wells' conception of the "over-mind" is not that of some super-intelligence, but rather the more or less coherent outcome of all that any of us are able to do in increasing human knowledge, encouraging insight, understanding and varied appreciation; acquiring and imparting the art of surrendering old beliefs and substituting new ones—in short becoming as brave adventurers as may be, always expectant of new discoveries.

v

Almost all of us who are interested in keeping people learning long after school days are over have in our simple enthusiasm neglected to ask an all-important question-Can people go on learning? The very urgency of inducing adults to alter their opinions and ways in view of rapidly increasing knowledge and changing conditions suggests that they do not go on learning. Never in the history of man has so much emphasis been laid on the perpetual childishness of men and women. This is but a recognition that education is early arrested. William James startled the readers of his famous Psychology by saying: "Outside of their own business, the ideas gained by men before they are twenty-five are practically the only ideas they shall have in their lives. They cannot get anything new. Disinterested curiosity is past, the mental grooves and channels set, the power of assimilation gone. Whatever individual exceptions might be cited to these

are of the sort that 'prove the rule.' "Thirty-four years later Professor Hollingworth still remained of the same opinion—and his opinions are based on far more special knowledge than James had. He says: "In general the fact seems to be that with increasing age, after maturity, learning capacity declines while general alertness and ability to utilize factors already acquired are still at their maximum." It will be observed that the statement of Hollingworth is much more guarded than that of James. James speaks of the impossibility of acquiring new "ideas," indeed "anything new." Hollingworth hints that the utilization of "factors already acquired" may readily be seen to improve or at least in no way to fall off. But in any case one has to face the question, What price adult education?

There is already a vast literature of education, most of it surprisingly dull and pointless. A great part of it has to do with vague ideals of what should be learned in order to mold character, or get on in the world, or become good men and women. Then there is much attention devoted to teaching and school administration. All this is easy compared with attempts to penetrate the mystery of learning. This comes and goes in mysterious ways and eludes calculation. Teaching may hasten learning; it may also block it or kill it outright, or sometimes just render it comatose for years. It took me thirty-five years to get over a "course" I took at Harvard concerned

with Shakespeare's works. Suddenly and unexpectedly the effects of the instructorial drug wore off and I found myself reading the plays with eagerness and delight, just as if I had never been taught to do it. As yet the whole matter of learning, whether of beasts, babes, or men, is very ill understood indeed. Since Dr. Thorndike wrote his famous dissertation on animal learning a number of investigators have turned their attention to the great question of how learning takes place. Among these Dewey, Pavlov, Köhler, Yerkes, Watson, Koffka, and Mrs. De Laguna have pointed out considerations which inevitably escaped the older writers. We have to know a great deal more before we can redeem the education of the young, but such redemption can only come by reeducating the elders who are in charge.

One of our troubles comes from using the word "education" in the same reckless fashion that we use other great words. We contrast the educated with the uneducated, as if education were a baptism or initiation. Thus employed it cannot be the theme of intelligent discussion. We have to reduce this grandiose term to its component parts. Education consists of acquiring the ability to do or know this or that. Education cannot be dealt with as a whole. For what is learning? How to solve a quadratic equation? How to decline *mensa*? How to locate British Guiana? How to miter a molding or lay a brick? How to tell a ripe alligator pear? How to relish

Racine? How to make eviscerating noises on the saxophone? How to avoid slicing? How to run a tap-and-die factory? How to make a cookie? How to select the right word? How to test hydrogen ion concentration? Now Dr. Thorndike is keenly alive to the diffuse and conjectural nature of pedagogical works. And his book² was a valiant effort to escape from the traditions. He asks definite questions which he anticipates experiments may answer. He then sets down in meticulous detail the data on which his conclusions are based. Many readers will find him too conscientious. They would prefer more conclusions and less elaborate reasons for them.

The purpose of his book, he says, is "To report the facts concerning changes in the amount and changes in the ability to learn from about age fifteen to about age forty-five, and especially from age twenty-five to age forty-five." By careful tests of the improvement of individuals of various ages in specific attainment he aims to settle the question whether the surcease of learning among adults is due to growing incapacity or is an echo of the marching song of the grousing camels reported by Kipling—"Can't! Don't! Shan't! Won't!" This is the first attempt to meet this fundamental problem squarely. Heretofore, "There has never been an extensive and systematic inquiry seeking to discover whether and to what

² Adult Learning, by Edward L. Thorndike (in Studies in Adult Education), The Macmillan Company, 1928, 335 pp.

extent infancy, childhood, and adolescence do have by nature an advantage over the years from twenty to forty in respect to ability to learn."

It will be impossible to do more here than to give an idea of Professor Thorndike's methods and his main conclusions. He first summarizes the experiments of previous investigators and then reports his own. He carried on three extensive series of tests, each with two hundred or more persons of various ages. The first had to do with the rapidity with which each member of prison inmates learned to read, write, and compute. Then he takes up the learning of typical high-school subjects, algebra, English, civics, and biology as observed in the case of adults in public evening high schools, and lastly, stenography and typewriting as learned by adults in secretarial schools. He included experiments also in writing with the wrong hand and mastering Esperanto. These are, of course, quite definite and specific types of achievement and so subject to tabulation in respect to the degree of perfection and the time taken in gaining them. The results are very carefully tabulated and curves plotted to give the outcome a graphic form. There is, however, a fair amount of connective tissue in the way of conclusions, reservations, and comment, which, coming from the author, will have much interest for the reader who appreciates the great importance of the investigation. The whole matter is far more intricate than most people

would imagine. There are obvious and hidden factors in abundance of which very few can be reduced to tabulation. No one is more fully aware of this than Professor Thorndike after many years of teaching and investigation.

The curve of ability to learn from age five to age forty-five seems to reach its height at about twenty-five and then slowly drop until by forty-five it corresponds to what it was at eighteen. But the change from eighteen to forty-five is so slight that one is justified in concluding that there is no reason for diffidence on the part of those in the prime of life in undertaking new branches of learning. Of course ability to learn must not be used in the old sense of "discipline," but rather as substantiated by "the unprejudiced sampling of different sorts of learning" as emphasized above. Up to the period of physical maturity there are bodily changes going on which cause the curve to rise rapidly in childhood and adolescence and which play no such part later in life. The author regards "The general influence of training in making an individual better fitted as a whole to learn" as largely mythical, although it is the constant solace of an inept educational system. Yet he feels that in youth one may gain "habits of very wide application, the tools which can serve in an enormous number of situations and those subtler habits which we usually call ideals, attitudes, methods of procedure, and the like." After

teaching adults and near adults for thirty years I concur heartily in this statement. I should only add that direct attempts should be made by all teachers to arouse and maintain a sort of sportive curiosity and spice the situation with adventurous scepticism which seems to be appropriate to this world of ours. We need both scepticism and animal faith, should be familiar with both and be able to indulge easily and consciously in both.

Professor Thorndike dwells a good deal on the time expended in relearning, owing to the effects of forgetting. It would be outside the limits of his inquiry to take up *unlearning*. But in our general attitude towards the great interests of life this is of prime importance. Whether experiments of a definite nature could be made in this field I do not know. There has been one questionnaire at least aiming to do this, but it seemed to promise little more than to make plain the vagueness and uncertainty of reported intellectual conversions or apostasies. As Herbert Quick says in his autobiography, reading doubtless maketh a full man—but full of what?

In any case, those interested in adult education need no longer be in doubt in regard to their major, if usually unconscious, premise. Older people are not cut off from learning by lack of ability to acquire knowledge and dexterities for which they honestly long and for which they are ready to pay the price. And the cost does not rise between eighteen and forty-five or fifty in any considerable degree.

Adult education requires something more than enthusiasm and a conviction of its feasibility. It also necessitates institutions and programs which are honestly committed to its principles and fearless in executing them.

vı

Teaching and learning are assumed to go hand in hand. But no one who is not professionally pledged to this assumption can fail to see that teaching commonly fails to produce learning, and that most we have learned has come without teaching, or in spite of it. The gestures and routine that make up teaching are familiar enough and can easily be acquired. Recitations, lectures, quizzes, periodical examinations, oral and written, text-books, readings, themes, problems, laboratory work, culminating in diplomas and degrees *cum priviligiis ad eis pertinentibus*, form the daily business of tens of thousands of teachers and hundreds of thousands of boys and girls in thousands of smoothly working institutions dedicated to the instruction of the young. Teaching in all its various manifestations can readily be organized and administered.

As for learning, that is quite another matter. It is highly elusive and no one has yet discovered any very secure ways of producing it. Being taught and learning

are obviously on different psychological planes; they involve different processes and emotions; are subject to different stimuli and spring from different impulses. Our "institutions of learning" are essentially institutions for teaching. Teaching is easy but learning is hard and mysterious, and few there be that attain to it. It seldom forms the subject of discussion in faculty meetings where it is tacitly assumed that pupils and students rarely wish to learn, and that the main business in hand is to see that those obviously indifferent to being taught are suitably classified and promoted or degraded according to the prevailing rules of accountancy.

Hitherto education in the formal sense has been confined almost exclusively to the young and adolescent. Almost all our vast educational system is devoted to the instruction of boys and girls under twenty-one years of age. Now how to get learning carried on by the young, except mayhap in technical and trade schools, appears to me after long years of observation to remain an unsolved problem. I am forced to confess that I do not know how to stimulate learning in the young, at least under the conditions which are imposed by formal education as it now exists. I do not think that there is ordinarily at best more than an affected interest in the subjects taught. An honest, ingenuous ardor for learning is assuredly exceptional in school and college. Not that the young do not usually wish to learn in their own way—not that they do

not learn and have not been learning from the time that they were born. I only suspect that they do not often learn when *formally* taught under the auspices of scholastic discipline. I may be wrong in this; and probably few of the guild would admit my contention. However this may be, one can conceive of a school which would be frequented solely by those who thought that they wished to learn and where there would be no other inducement than the proffered opportunities to learn.

Such is the New School for Social Research founded in 1919.³ It appeals to adults who after some experience of life are eager to extend, elaborate and elucidate their personal experience by studying matters which have aroused their curiosity, shown up their ignorance or puzzled them. No one comes to the New School because he is sent; or hopes for a degree or diploma, or even for the momentary relief that comes from pleasing teacher by matching a series of questions with acceptable answers. This greatly simplifies the problem of encouraging learning. We do not have to generate the preliminary sense of need which forms the heaviest responsibility in school and collegiate education.

A second simplification consists in confining our studies to mankind and his present predicaments—to public affairs and human organization;—all, of course in the

^{*}Dr. Robinson took the lead in founding this foremost institution of adult education.

light of man's history and nature as now understood. History, anthropology, psychology, biology, economics, sociology, public law and the rest of the disciplines which have man, his nature and social organization, for their theme are not set off in departments but are concentrated into a common effort to state and explain so far as may be human conduct, aspirations and organization. There is at present an unparalleled bewilderment among thoughtful people in regard to all these matters, a perfectly genuine conviction of ignorance—the beginning of wisdom—and an unmistakable anxiety to reduce one's own mental confusion.

The social sciences are in somewhat the same situation in which the natural sciences found themselves three hundred years ago in the days of Francis Bacon, Galileo and Descartes. They have to emancipate themselves from academic traditions and popular prejudices which suspect and resent any fair statement of the actual terms and conditions of human life. Henry Adams felt that "every instructor has to shut his eyes and hold his tongue as though he were a priest." This is true especially of those dealing with the sciences of man. These subjects have to be dealt with in a gingerly manner in our schools and colleges. Even in the universities one cannot tell all that he thinks he knows about our business system, our banks and factories and mines; about the Legion or the I. W. W.; about religion, marriage, and patriotism; about the newspapers; about the Senate and Supreme Court of the United States. The *virginibus puerisque* argument is always a potent check on scientific frankness. And even our graduate schools are so closely connected with the undergraduate instruction that the same restraints often carry over.

We in the New School can venture to be shamelessly interested in current conditions just because we can treat them without the reservations imposed by the educational mores. We can think as freely as we are capable of thinking just because we are not afraid that too much thinking is likely to be done either by ourselves or by our students. The excessively retrospective tendency of much of the teaching in the social sciences is merely an attempt to escape from the hazards of talking honestly about prevailing conditions. The policy of the Hanseatic League can be treated with a freedom impossible in the case of the United States Steel Corporation. One may venture to say all he knows of such long-dead pacifists and radical reformers as Pierre Dubois and Marsiglio of Padua; an equally fair statement of the contentions of Lenin or Norman Thomas would obviously be offensive and tend to create intellectual "unrest." But our object is not to allay doubts and rationalize what exists. It is frankly to stimulate questioning and investigation among the men and women that come to us. Our only fear is that the questioning and investigation will not be thor-

oughgoing enough, not that it will be dangerously free. The New School is no guardian of the morals of the young; it does not function *in loco parentis*, or even *in loco almæ matris*. Its instructors are scientifically interested in the subjects they deal with; they all believe that fundamental social readjustments are inevitable, but they are pledged to no program of reform, old or new; they are simply looking for light, and encouraging others to do so. Facts are not classified in their minds as safe or dangerous; radical or conservative; suitable for the young or adapted only for the old and settled.

The school is conducted by a body of selected instructors. The board of directors in which the financial responsibility is necessarily legally **vested**, contains several members of the teaching group and should ultimately be made up mainly of the instructors and of those former students in the school who know its personnel and aims. There is neither president nor dean, but just enough amiable administration to transact business and centralize the activities of the school. There is no academic hierarchy and no academic promotion. Young and old are on the same footing of individual responsibility and cooperative helpfulness.

There is a happy mixture of those who lay special stress on the rôle of the school in shedding light on the possibilities of practical industrial, social and political readjustment, and those who feel themselves drawn to more strictly scientific and philosophic research. These two tendencies are not in conflict but should reënforce one another even as so-called applied science has constantly controlled and promoted scientific theory.

This is the way in which the New School appears to one of its original members. Doubtless other phases of its aims and possibilities would be stressed by other members of the group, each according to his individual tastes and experience. We all agree however in a sentiment of responsibility. We miss only one thing in the old standardized system. We can no longer refresh ourselves with "truculent quietism," that potent bracer upon which our class is accustomed to rely. Where we fail we have only ourselves to blame. L'école, c'est nous.

VII

Many institutions, roughly comparable to the New School, have sprung up since we established that institution in 1919. The institutional basis for adult education is thus being looked after more adequately as the years roll along. But there is still a dearth of teachers who have the temperament, preparation, and vision to carry on effectively the type of instruction which is needed.

Modern scientific research, in spite of its professed aloofness and disregard of human feelings and motives, has succeeded in unfolding to our gaze so new a world in its origin, development, workings, and possibilities of control in the interests of human welfare, that practically all of the older poetic and religious ideas have to be fundamentally revised or reinterpreted.

Scientific knowledge, ingeniously applied and utilized by inventors and engineers, has, with the assistance of business men and financiers, metamorphosed our environment and our relations with our fellow men.

Lastly, our notions of our own nature are being so altered that should we discreetly apply our increasing knowledge of the workings of the mind and the feelings, a far more successful technique might finally emerge for the regulation of the emotions than any that has hitherto been suggested. This is at least an exhilarating hope.

Now if all this be true we are forced to ask whether it is safe, since our life has come to be so profoundly affected by and dependent on scientific knowledge, to permit the great mass of mankind and their leaders and teachers to continue to operate on the basis of presuppositions and prejudices which owe their respectability and currency to their great age and uncritical character, and which fail to correspond with real things and actual operations as they are coming to be understood?

A great part of our beliefs about man's nature and the rightness or wrongness of his acts, date from a time when far less was known of the universe and far different were the conditions and problems of life from those of today.

We now urgently need a new type of wonderer and

pointer-out, whose curiosity shall be excited by this strange and perturbing emergency in which we find ourselves, and who shall set himself to discover and indicate to his busy and timid fellow creatures a possible way out. Otherwise how is a race so indifferent and even hostile to scientific and historical knowledge of the preciser sort—so susceptible to beliefs that make other and more potent appeals than truth—to be reconciled to stronger drafts of medicinal information which their disease demands but their palates reject?

We need, thus, a new class of writers and teachers of which there are already some examples, who are fully aware of what has been said here and who see that the dissipation of knowledge should be offset by an integration, novel and ingenious, and necessarily tentative and provisional. They should undertake the conscious adventure of humanizing knowledge. There are minds of the requisite temper, training, and literary tact. They must be hunted out, encouraged, and brought together in an effective, if informal, conspiracy to promote the diffusion of the best knowledge we have of man and his world. They should have been researchers at some period of their lives, and should continue to be researchers in another sense. Their efforts would no longer be confined to increasing knowledge in detail, but in seeking to discover new patterns of what is already known or in the way to get known.

They should be reassorters, selecters, combiners, and illuminators. They should have a passion for diffusing, by divesting knowledge as far as possible of its abstract and professional character. At present there is a woeful ignorance even among persons who pass for intelligent, earnest, and well read, in regard to highly important matters that are perfectly susceptible of clear general statement.

The reassorters and humanizers should combine a knowledge of the exigencies of scientific research with a philosophic outlook, human sympathy, and a species of missionary ardor. Each of them should have professional familiarity with some special field of knowledge, but this should have come to seem to him but a subordinate feature of the magnificent scientific landscape. A good deal of courage is necessary too. Some of us experience a certain sense of outlawry when we wander beyond the assured precincts of our guild. This will amuse or depress us, according to our mood.

CHAPTER XIII

THESE EVENTFUL YEARS

It is the supreme task of the historian to be able to place his own generation against the whole background of the human comedy. Each generation of us has to trip across the stage, whether we will it or no. It behooves us to do it as intelligently as we may. It has been a commonplace reflection that no generation can write its own history. We are supposed to be too near our own times to perceive the contours, setting, and perspective of events. But like all other commonplace reflections, this also invites reconsideration. Who is ever to know more than we do about what goes on around us? Lincoln is reported to have asked, when the Britisher said, "we never black our own boots," "whose boots do you black?" If we don't write our own history, whose history are we to write?

All knowledge of the past, whether of a thousand years ago or of the just expiring present, must be based upon reports of what men have said or done, or upon vestiges of their handiwork. The impressions to which we always give preference are those of contemporaries.

The description of Charlemagne by his minister, Einhard, is surely much more reliable than the account Suetonius gives us of the Emperor Tiberius, whom he had never seen. We have to take the tales told us of Justinian and the fair Theodora by Procopius somewhat seriously, just because he lived in their day, although one suspects that at times he was a dirty liar. Ordinarily we know of our distinguished contemporaries only by hearsay. Most of us have not seen Stalin, Hitler, or Mussolini any more than we have seen Wolsey or Richelieu. There is little difference therefore in the ways we learn about the past, whether recent or remote. The real distinction lies in the amount of our information. It is confusingly abundant in regard to our own times, whereas we can turn to the few pages which comprise all the fairly authentic statements about Julius Cæsar or Charlemagne and say, lo, this is real history. But it would have seemed pretty inadequate and misleading stuff to a Cicero or an Alcuin, who were on the spot.

Doubtless a few things are hidden which will later be proclaimed from the housetops. Diplomats have been wont to bury and seal up their fatal arrangements so that they themselves would be well dead before anyone else could learn about them. Then private letters and memoirs, too hazardous to be released in one's own life time, may emerge. By and by our own day will have been assigned its chapters in manuals and text-books which may here and there be very slightly modified by these posthumous revelations.

In general it may be said that each generation has far more abundant and authentic information about itself than any succeeding one. And its view of itself may be no less true and no less wrong than any estimates which will be made in the future. We of this present day have gone through three very different moods—that before the World War, that during the conflict, and that which has followed the close of active hostilities. In which of these periods were our impressions at their best and truest? Who can say?

One of the chief and hitherto neglected elements in intelligence and insight is historical-mindedness. This we are gaining gradually. As we gain it we shall be able to deal more and more efficiently with our own eventful years. When we come to live in a present which is the recognized outcome of the past and the vestibule of an inevitable future, full at once of inexorable perpetuations and startling surprises, we shall have arrived. Then we shall write our own history better than anyone to come. Even the way we feel about the present is after all history, and history of the utmost importance.

It may be that some writer a thousand years hence may say of us as Gibbon says of those who bore down for centuries on the Eastern Empire: "Their names are uncouth, their origins doubtful, their actions obscure, their superstition was blind, their valor brutal, and the uniformity of their public and private lives was neither softened by innocence nor refined by policy." But Mr. H. G. Wells in our own day in *The Dream* is able to forecast this. He is historically minded, and he has done more than any dozen academic historians to render our generation historically minded.

It happened that over thirty years ago I completed a brief review of the *History of Western Europe*, from the break-up of the Roman Empire onwards. Recently, I was called upon to revise it. Suppose I were asked to put together some of my impressions as I try to jump back over the wide gulf that has opened between us and the solid land on which we stood going on two score years ago. I would find it almost as hard to reconstruct the bland assumptions of 1904 as those of the time of St. Louis or Augustus.

These thirty years have witnessed a more startling accumulation of human information, more astounding applications of ingenuity and, at the same time, a more tragic indictment of approved human institutions, than any of the stately eras into which we are wont to divide history. We have eaten of the tree of knowledge so freely that we are bewildered as no previous generation has ever been. For when good and evil tend to become matters of intelligence rather than of habit and routine, our old moorings are lost and we are tossed about on the

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waves of illimitable doubt. Former assurances turn into questions; and solutions into problems. Democracy, for instance, seemed thirty years ago an herb destined to heal the nations—a safe and gentle purgative of ancient impurities in the body politic. Now it is seen to have physiological effects of an incalculable nature when applied to Russia or China. Even in our own country, which might be imagined by this time to be fully inured to the drug, strange and perturbing symptoms are appearing. We see now that we had really been taking it only in small doses. The prognosis of what Professor McDougall has ventured to call "unmitigated" democracy is a matter of mere conjecture to the very wisest today. Even incomplete democracy is now being desperately threatened.

Thirty years ago the Liberals were marching along, confident that they knew the secret of a beneficent future. Their cohorts still shone against the subdued background of conservatism. We could not foresee that they were destined so very soon to be outflanked and driven back by groups hitherto negligible in the conduct of the state. When in 1906 the Laborites won fifty seats in the House of Commons it was deemed a notable achievement. The rashest of prophets could not have hazarded the guess that Great Britain, France, Germany, and Russia would be under socialistic ministries in 1924, or that autocratic dictatorship would have gained a foothold in more than half of Europe a decade later.

One might be forgiven if in 1904 he was under the impression that the trend of governmental reform was fixed for a long time to come. The French Declaration of the Rights of Man had taken the teeth out of ancient monarchy, and the British constitution, with its bicameral system and its responsible ministry, furnished a model toward which other nations might strive. Belgium, France, Italy and various lesser states had caught up with the procession. Germany might any day get a chancellor responsible to the Reichstag, and the prerogatives of the Bundesrath be reduced. Russia had a long way to go, but very soon a beginning was made by the creation of the Duma. The gross anachronism of an aristocratic upper house, the significance of proportional representation, and of functional representation, and above all, the dangers of an uncontrolled foreign office were not conspicuous thirty years ago. France seemed to have become a republic for good and all, but it had taken her a long time to become so; and no one could foresee the incredible increase of European republics which were soon to appear on the map. The boundary lines between European states appeared thirty years ago to be fairly fixed, subject to some possible mutations in the Balkan region. The idea of "nationality" was, it is true, flagrantly violated in the Austro-Hungarian complex, but the good old Hapsburg realms had withstood many a severe shock and might continue to do so. Racial minorities kept on

raising their protests here and there, but it looked as if Poland was partitioned for good and all, and that Alsace-Lorraine was likely to remain a part of the German Empire. The sore spot represented by the remains of the Ottoman Empire in Europe appeared to be healing, in spite of periods of acute inflammation.

In short thirty years ago as one completed a manual going back to the days of Alaric and Augustine, as a terminus a quo he might be excused for thinking that the unification of Germany and Italy and the Franco-Prussian war represented a national terminus ad quem, as the Scholastics would have put it. The tale seemed to be nicely rounded out and the historian could lay down his pen, or stop pattering his typewriter, with a sense of provisional finality. He might, if he was fortunate, have mentioned the Congress of Berlin, which would seem to be rather dragged in. The Triple Alliance was a rumor in 1904 and the secret counter-understanding between France and Russia too well hidden to be reckoned with. Who could foresee that these and similar dark hints forecast a thoroughgoing revision of the whole perspective of modern history? History does not seem to stop any more. All the historian can do nowadays is to leave off, with a full conviction that he may have played up merely specious occurrences and have overlooked vital ones. In 1904 he would hardly have mentioned the cession by the Congress of Vienna of the Ruhr valley to Prussia; now

he has reason to emphasize this. The "bloodless" Turkish revolution of 1908 seems to take on a new aspect since Kemal and the Angora government have come on the stage. Not only does the past make the future but, when we get wise enough, we see that the future is constantly remaking the past.

In writing history it is also becoming harder and harder to justify any particular point of departure. It is as difficult to tell where to start as where to stop. One has somehow to scotch the eternal snake without killing it. The Middle Ages, after the works of Harnack, Dill, Taylor, Lot, Glover, Cumont and many others, appear, from a cultural standpoint, to be a sort of attenuated later Roman Empire. And the later Roman Empire witnessed the lapsing of borrowed Greek culture; and the Greeks, we now know, were pretty dependent on all the wonders that were achieved by Egyptians and western Asiatics, who built on the fundamental discoveries of neolithic mankind, whom we must recognize incredible progressives compared with their predecessors. It took the race, with its humble origins, so long to make a hatchet to be held in the hand, then so long to set it in a handle, then so long and so recently to set the handle in the hatchet! Since that achievement all things appear to have been going with extraordinary rapidity. Thirty years ago I had little "feel" for this, and few others had. Now it seems to me that the history of the race since Menes I of Egypt (the first recorded human name in history) is a very brief period, and that we are at the beginning of the beginning, as Mr. Wells conjectures rather than in a somewhat advanced and ultimate phase of human achievement. The human comedy seems to me now about to start. The curtain is up and the play is on. The tempo of the overture has increased from largo to presto and pretty soon, the nimblest fingers will not be able to keep up with the score, unless we acquire unprecedented dexterity—and we may.

History I am now inclined to describe as an effort to recall those reminiscences of the past which cast most light on the present. It is an extension of our personal memories. Memory alone renders us sane and able to make judicious terms with things. History properly conceived should vastly augment our insight by widening our memories. It should contribute to precisely the same end as personal recollection, namely, that of orienting us in a world we never made, where we are strangers and afraid—to paraphrase the delightful lines of Mr. Housman.

From this standpoint most history books are poor, dull things, written by unimaginative people with the temperament of faithful clerks. Conscientiousness and Insight seem suspicious of one another, and yet they might be friends. Careless talk about the past is just as bad as reckless statements about the present. An indefinite

amount of slavish work is necessary to mine out the raw materials essential to forming any just estimates of the past—and there seem to be a good many willing to undertake this laborious kind of work. It is far more difficult to find those who can reduce crude information to wisdom and supply us with enlightening reminiscences. It is proper, however, to demand that such reminiscences be authentic, that is, based upon the best and most critical information we can get. This raises the troublesome point of how we are to view the past at once with cold scientific aloofness and at the same time apply it to our particular needs.

"Objective" history is supposed to be a search for facts regardless of any preferences or aims, except the discovery of the raw truth. It is history without an objective. I have come to think that no such thing as objective history is possible. One has always to make some kind of a selection in saying anything about the past. All writers consciously or unconsciously have to pick and choose from the inchoate mass of information at their disposal. They have, moreover, many unrecognized assumptions underlying their procedure. It cannot be otherwise. But if a historian does not appear to see any particular significance for himself or the reader in what he is putting down, and the reader sees no other import than the bare authenticity of the facts recorded, I suppose that a work on this basis can properly be called "objec-

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tive." Histories of this kind are known only to the profession for the most part. Then there are the makers of historical tools, like Potthast, Chevalier, DuCange, Giry, Wattenbach, who answer highly technical questions and help the expert to find his way around. Their names are scarcely household words even among fairly assiduous students of the past. All this kind of business is fine and fundamental and it makes no difference how dull it may be, since those who know how to use it clearly perceive its value. All such books form the *scientific* basis of history. I plead, however, for a sharp distinction between meeting the needs of the professional historian and those of the public. And the two are often confused, as may be seen in innumerable historical works which fail to suit either class very well.

As I write this I have a vision of the Anaconda Copper Mills, where a selected variety of dirt is hauled over in cars from Butte and dumped into the most intricate series of sorters and melters until a good many useful things emerge in excessively small quantities compared with the tons which are fed into the discriminating devices which cover the hillside. At the very bottom comes a vivid stream of salmon-colored molten copper; but even this is not quite ready for human needs until it is sent up to Great Falls to be still further freed from extraneous matter. Even so with the raw materials of history, which have to undergo successive sortings and

refinements to meet the various needs of the ultimate consumers.

The problem of smelting history has preoccupied me for years. How is human experience to be presented so as to do the most good in the case of school children, college students and the public? The past is a mine full of precious ore and as yet there is not any machinery adequate to save much of it. The mind of Mr. H. G. Wells is the best device which has yet appeared in the matter of varied efficiency. As I go over his Outline of History I am astonished anew at the incredible results of restoring, as Ruskin would have said, "the innocency of the eye." Mr. Wells sees the obvious, which is the greatest human achievement. I continue to wrestle with the problem and feel that I make a little progress in wriggling out of the old net that has entrapped the writers of historical handbooks. I am quite sure, however, that even the best of our historical manuals are still full of irrelevancies and fatuities which happen to have got sanctioned. I am sure that much of value has so far failed to be captured. Then teachers have an idea of what history should be, derived from an unintelligent past; and there are innumerable popular prejudices, patriotic, religious, political, economic and virtuous, which prevent one's telling what is best worth while. The possibilities have grown in my view during the past thirty years and at

the same time the obstacles in the way of realizing them have rather increased.

At a meeting of the American Historical Association some years ago Professor Cheyney read as his presidential address a paper on the laws of history.1 This attracted much attention. There is no one among our professional historians whose opinions are better worth considering than those of Professor Chevney. All that he had to say was admirably tentative and there is no doubt that a case can be made out for certain drifts, tendencies and currents in the past. And I infer that Professor Cheyney really meant scarcely more than these by what he apologetically called "laws." History is certainly a strange record of dogged survivals and of the abrupt and seemingly inconsequential injection of novelties and the perturbing effects of various altogether exceptional personalities, like Alexander the Great, Jenghiz Khan and Napoleon Bonaparte. How could it be otherwise? The foundation of my own historical philosophy is the simple proposition that the overwhelming part of our beliefs and institutions and habits in general are as they are because they have been as they have been. And if we are to see things now and then as they are, the easiest way is to see them as they have been. This so-called genetic or historical approach is the discovery, I conjecture, not of the historians but rather of the natural history people,

¹See above, pp. 72 ff.

who taught the historian this most important of lessons. So history, when rightly understood, is but the most efficient way of seeing why we do as we do.

When it comes to be thus interpreted it will be the most vital and indispensable of preoccupations. It will show why we shut up shop on Sunday, which is the fault of the Babylonian anxiety to dedicate a day in turn to each of the heavenly bodies which aroused their respect, and why we have until recently elected a president in early November and installed him in March. It will also make plain why the British use "d." for pence and " \pounds " for pounds. In some minds antiquity stirs veneration; in others distrust. But it gets in its work just the same.

Among the seeming accidents of history which had widespread and lasting effects were the conquests of the youth Alexander of Macedon, in his burning desire to put his hated father in the shade. Likewise the coronation of Charlemagne as Roman Emperor, which implanted the longing in German kings from Otto the Great onward to keep a hold on Italy and exercise a peculiar control over the head of the Christian church, thus deflecting German history into unexpected channels for centuries. Then there is such a strange case as Henry VIII's reverence for a certain verse in Leviticus and his affliction with a certain disreputable disease which can hardly be left out of the origins of the Anglican establishment; and the restless Corsican's consolidation of a disrupted Germany, which cannot be left out of the history of the World War. But in our own private lives we are familiar enough with what seem to be the most chance determinants in our fate. That distinguished logician Charles Peirce found himself turning his thoughts before he got through from logic to "chance" and "love." They cannot be left out of the game.

There can be no doubt that future historians will be deeply affected in their interpretation of the past by the growing insight into the workings of human desires, as these are now coming to be understood. To most students of the past, men of old seem to be historical personages, rather than human beings. It requires some unusual exercise of the imagination to realize that the young Louis XVI was not merely or mainly a French monarch but a self-conscious, awkward youngster, seriously embarrassed by the lively Austrian girl foisted upon him. No one can say what intimate discussions were connected with the abrupt dismissal of his wise minister Turgot, who himself was cursed with bashfulness disguised as brusquerie. We take care now to establish beyond any peradventure the common humanity which we shared with a former chief executive by exhibiting his father buying a can of tomatoes at the country store. This is one of the by-products of democracy and rotary presses.

Historical writers have usually fuller accounts of kings

and princes, their courts and wars, than of other people and happenings, so almost all our manuals make political history the main issue. It is readily assumed that a history of England or France or Germany is first and foremost an account of rulers and their conflicts with other rulers. It is well known that the English historian, Freeman, defined history as "past politics." The res publica or State would indeed appear to be the most indisputable object of common interest as over against merely private experiences of individuals. Like the Church it can be nobly defined. Professor Woolsey describes it in its modern sense as "a community of persons living within certain limits of territory, under a permanent organization, which aims to secure the prevalence of justice, by selfimposed law." Thirty years ago this definition would not have fallen so oddly on one's ears as it now does. The solemn academic treatises on government, the works of Stubbs and Hallam and Bluntschli and Professor Burgess were accepted at their face value and assumed to have some rather close relation to the facts of public life and to its history. Now we are becoming disillusioned both in respect to government as now practiced and the general history of the state.

As I reviewed the atrocities of the Roman imperial government, the conduct of kings and vassals in the Middle Ages, the Hundred Years' War, the times of Charles V and his son; the comings and goings of the armies of Louis XIV and of Frederick the Great, it happened that Veblen's book on *Absentee Ownership* came to hand and I found fresh definitions for the historic state which suited the observable facts rather than the current talk about the state.² To Mr. Veblen the state has been a "princely corporation" most of whose attention has been devoted to the interests of its members, and to attacks on other princely corporations. As one rereads history in the light of recent events, foreign and domestic, I cannot but feel that he will agree that Mr. Veblen has given a marvellously suggestive statement of the general trend of things in the past.

Can any student of history when once his eyes are opened disagree with Mr. Veblen in suspecting that the fine talk about securing order and justice and the alleged divine attributes of sovereignty were essentially an unconscious expedient for keeping the underlying population on the job? The people at large were "a perpetual and inalienable asset of the dynastic establishment, by the Grace of God" and by force and teaching the underlying population soon came to see that the arrangement was not only unavoidable, but a most just and holy one. So that to traduce government, were any one tempted to do so, brought any daring member of the underlying population to the halter; and any murmurer among the great to the block.

There can be no doubt that our governments of today *See above, pp. 233-4.

are derived from kings and their courts. The very word sovereignty which so many ardent defenders of our institutions are wont to recall, smacks of the sovereign and his entourage. But how far our modern politicians and office holders are able and inclined to carry on the traditions of the "princely corporation" is hard to say. There seems to be a certain difference between Henry VIII or Louis XIV, on the one hand, and Calvin Coolidge or Franklin Roosevelt on the other. All of them have enjoyed, it is true, a curious "transferred" dignity which quite outran their personal distinction. As head of a state they all had to be heavily overrated and assigned a species of divine exceptionality. They are all symbols, in shortand a symbol enjoys, so to speak, the courtesies of the port. It is exempt from vulgar examination. I suspect that we have made some little progress toward conceiving government as a method of efficiently transacting our common affairs, but the hold-overs of tradition are still stronger than most of us suspect. History, if properly written, would put us on our guard, and show us what we are up against.

History-the illuminating reminiscences of times gone by, as I conceive it-should work for sophistication. And sophistication means understanding and insight and wisdom. It is no trivial and supercilious affectation, but something most fundamental. We cannot attack our political, religious, economic, educational and social stand-

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ards directly, although we may well suspect that they must *per force* be anachronisms. They may all, however, issue into a clearer light when we think how everything that now goes on has come about. So history might be the great illuminator. As yet it is highly imperfect; but some day it may well become the most potent instrument for human regeneration.

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